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# Current Technology Trends in Libraries

Dr. Priya Pillai\* and Dr. Vandana Shelar\*\*

## INTRODUCTION

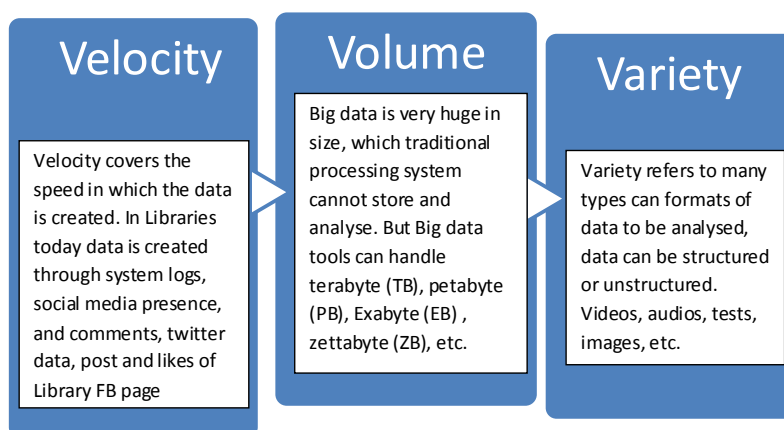
30 years back, libraries were used as card catalogues. Today, innovative libraries are using modern digital tools to provide services to its patrons. Some of the digital tools which are changing the skill set required by the library staff and the users are given below.

### (a) Big Data

What is Big Data?

**According to International Data Corporation (IDC)**, “**Big Data** technologies, as a new generation of technologies and architectures, are designed to extract value economically from very large volumes of a **wide** variety of **data** by enabling high-velocity capture, discovery, and/or analysis.”

**According to Garter the Big data Definition is defined in terms of three ‘V’s- Volume, Velocity and Variety**



Two more Vs have emerged over the past few years: **value** and **veracity**.

Data has intrinsic value. It is equally important whether the given data if analysed really have any value to the library. Veracity in data analysis is the biggest challenge when compares to things like volume and velocity. Big Data Veracity refers to the biases, noise and abnormality in data. Data cleaning is the biggest challenge any data analyst today faces. veracity refers to therefore the authenticity and credibility of data

Application of Big Data in Libraries

**(a) Demand Analysis:** The user’s previous search preferences and reservation details may help the libraries for collection development.

**(b) User feedback and comments** can be analysed and value added services can be introduced.

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- (c) Analysis of Logfiles of users will help to better identify the need of users by the employment of effectively used collections, frequency of visit by users, etc.
- (d) Big Data analysis is helpful in exactly understanding the depth of knowledge of what the users need. The data which would be previously considered junk or otherwise not used, can be analysed today due to advancement of technology. The analytics can search for useful data from the logfiles, social media comments, search preferences of users, etc. The library can connect the user with newly arrived documents as per their previous searches. Furthermore, libraries can use Big Data to create a personalized user experience by offering content and resources based on each individual wish. However, the library must take into account several privacy issues, and take actions accordingly.

## (b) Artificial Intelligence

As of the 21st century, several new technological advances have come to revolutionise our library services. One such technological advance is the use of Artificial Intelligence. Artificial Intelligence has often been regarded as something that will replace humans in various fields of life. Libraries are no different.

As per a definition by Andreas Kaplan and Michael Haenlein, Artificial Intelligence is “a system’s ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation.”

Nearly all of the emerging technologies are built on machine learning. Machine learning is applied mostly in recognising patterns, voice recognition and periodically, in decision making.

AI is entered in Libraries in the form of CHATBOTS that can answer questions posted by users on library websites, alert user when a book is due, and provide information literacy instruction services. The artificial intelligence is helpful in searching information from a digital content. With such advances, a Library can avoid a subject heading keyword search if the search engine is controlled.

Mogli (2014) identifies following applications using AI in Libraries

- (a) Expert system : to develop expert system artificial intelligence can be used in Libraries
- (b) Natural Language Processing. Computers in traditional processing system can’t understand natural languages. But AI can take natural languages, can identify voice of human beings. The best examples are Amzon alexa, Siri and Google Assistant
- (c) **Pattern Recognition** : As an example, Amazon makes use of the Artificial Technology in its recommendation engine. Utilising data collected from an individual’s previous purchases and browsing history, Amazon makes a consolidated list of items and products that that individual might be interested in buying. The use of AI in this field has been exceptionally profitable to Amazon, as the recommendation engine owes up to 35% of the company’s revenue. Adopting the same technology, the library can create personalised recommendations and tailored search results based on recent search history, demographical information, user’s behaviour and preferences

## (c) Robotics in Libraries

Robotic applications and artificial intelligence are rapidly spreading in all types of libraries. The library staff in a day is handling many queries which is very basic and repetitive in nature. It may take only one or two minutes to anser but in a day answering many users same type question is itself a tedious act. Here a robot can step in. the robot can point or direct the customers to exact location of the shelf. It can answer simple questions like “ where is the Psychology section”. where I can get this periodical etc. Robots can be used in carrying books to one floor to another and rearrange

books. They can also identify misplaced books. Robots can access the library database in real time answer the customers query whether the particular book is available or not. Robots can also be used to deliver user education, entertain people etc

## **IOT TECHNOLOGIES IN LIBRARIES**

One of the most remarkable changes in the technology is the shift of Internet- from being primarily used for communication to being used for Internet of Things. With this change, everyday objects in libraries like Chairs, Shelves, other types of furniture, LCD, bulb, Air Conditioner, Parking, which are not themselves computers, are able to connect with internet through sensors embedded in them. The data collected through these sensors can be transferred to the internet. This entire process can be carried out devoid of human interaction. (Kaba & Ramaiha 2019)

This paradigm shift from Internet of communications to Internet of Things (IOT) is bound to impact business models, consumer experiences and everyday life. (pujar

From the above paragraph, it can be deduced that IoT is a complex of things (or mechanisms) connected with each other over the Internet. They can “communicate” with each other and act without people’s intervention (IFLA)

### **Application of IoT in Libraries**

#### **(a) Improved access to Collection and Library resources**

Through special apps and RFID technology, library users can be connected directly to the shelves to locate the resources.

#### **(b) Collection Management and Inventory Control**

The sensors can track the movement of each item in the Library. It can be applied to library technologies, resources, furniture, etc.

#### **(c) User Education/ Information Literacy Instruction**

The libraries can apply the Internet of things in providing virtual tour of the library. IoT has enabled libraries to provide self-guided virtual tour inside the library. In the form of video or audio, an individual can learn how to use a particular database, technology or digital content (Pujar and Satyanarayana, 2015, Mossis 2015).

#### **(d) Notification and Recommendations**

Library card enabled with IoT will trigger a message if a book is overdue or sent recent additions in library whenever the user enters the library building. This notification system can be used to notify an individual about other available books on a particular subject that the user may have searched for on the library catalogue or on the library shelf.

#### **(e) Automatic feedback mechanism**

The library can automatically send survey questionnaire regarding any special services or events after the users used such services

#### **(f) Safety**

The IoT enabled library can trigger an alarm at the time of fire. The sensors can sense the smoke and disaster fires can be dealt with safely.

## 3D PRINTING

A computerized machine that can turn a verbal command into 3-dimensional objects.. 3D printing, also called rapid prototyping or additive manufacturing, is manufacturing gone digital. A digital design file, created in two dimensions on the screen, can be rendered as a 3-dimensional real-world object. In Libraries the services are taken over by machines and the users are increasingly using online services, It is very important for libraries find new avenues to attract the users. 3D Printing services is one of them. The users can use these services along with library. ALA President Sari Feldman contributed to an NPR story on the evolving use of 3D printers in libraries. "It's actually part of a larger trend...where once we thought of libraries as places where we had things for people, now we really do things for people - or do things with people." In libraries hosting 3D devices, the emphasis is on the community of people sharing and making with each other([https://www.webjunction.org/news/webjunction/3D\\_Printer\\_Revolution.html](https://www.webjunction.org/news/webjunction/3D_Printer_Revolution.html))

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# Effects of Income Tax Changes on Economic Growth: A Compare Study

Rubeena Kottuthody\*

## INTRODUCTION

Policy makers and researchers have long been interested in how potential changes to the personal income tax system affect the size of the overall economy. We focus on how tax changes affect economic growth. There are two types of tax changes – reductions in individual income tax rates and “income tax reform.” We define the latter as changes that broaden the income tax base and reduce statutory income tax rates, but nonetheless maintain the overall revenue levels and the distribution of tax burdens implied by the current income system. Our focus is on individual income tax reform, leaving consideration of reforms to the corporate income tax and reforms that focus on consumption taxes for other analyses. By “economic growth,” we mean expansion of the supply side of the economy and of potential Gross Domestic Product. This expansion could be an increase in the annual growth rate, a one-time increase in the size of the economy that does not affect the future growth rate but puts the economy on a higher growth path, or both. Our focus on the supply side of the economy in the long run is in contrast to the short-term phenomenon, also called “economic growth,” by which a boost in aggregate demand, in a slack economy, can raise GDP and help align actual GDP with potential GDP.

We find that, while there is no doubt that tax policy can influence economic choices, it is by no means obvious, on an ex ante basis, that tax rate cuts will ultimately lead to a larger economy in the long run. While rate cuts would raise the after-tax return to working, saving, and investing, they would also raise the after-tax income people receive from their current level of activities, which lessens their need to work, save, and invest. The first effect normally raises economic activity, while the second effect normally reduces it.

## HISTORICAL BACK GROUND OF THE TAX

The first known system of taxation was in Ancient Egypt around 3000–2800 BC in the First Dynasty of Egypt of the Old Kingdom of Egypt. The earliest and most widespread form of taxation was the corvée and tithe. The corvée was forced labour provided to the state by peasants too poor to pay other forms of taxation (labour in ancient Egyptian is a synonym for taxes). Records from the time document that the Pharaoh would conduct a biennial tour of the kingdom, collecting tithes from the people. Other records are granary receipts on limestone flakes and papyrus. Early taxation is also described in the Bible. In Genesis (chapter 47, verse 24 – the New International Version), it states "But when the crop comes in, give a fifth of it to Pharaoh. The other four-fifths you may keep as seed for the fields and as food for yourselves and your households and your children". Joseph was telling the people of Egypt how to divide their crop, providing a portion to the Pharaoh. A share (20%) of the crop was the tax (in this case, a special rather than an ordinary tax, as it was gathered against an expected famine) The stock made by was returned and equally shared with the people of Egypt and traded with the surrounding nations thus saving and elevating Egypt.

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The Rosetta Stone, a tax concession issued by Ptolemy V in 196 BC and written in three languages "led to the most famous decipherment in history—the cracking of hieroglyphics" A tax (from the Latin *taxo*) is a compulsory financial charge or some other type of levy imposed upon a taxpayer (an individual or legal entity) by a governmental organization in order to fund various public expenditures. A failure to pay, along with evasion of or resistance to taxation, is punishable by law. Taxes consist of direct or indirect taxes and may be paid in money or as its labour equivalent. The first known taxation took place in Ancient Egypt around 3000–2800 BC. Most countries have a tax system in place to pay for public, common or agreed national needs and government functions. Some levy a flat percentage rate of taxation on personal annual income, but most scale taxes based on annual income amounts. Most countries charge a tax on an individual's income as well as on corporate income. Countries or subunits often also impose wealth taxes, inheritance taxes, estate taxes, gift taxes, property taxes, sales taxes, payroll taxes or tariffs.

In economic terms, taxation transfers wealth from households or businesses to the government. This has effects which can both increase and reduce economic growth and economic welfare. Consequently, taxation is a highly debated topic. The legal definition, and the economic definition of taxes differ in some ways such as economists do not regard many transfers to governments as taxes. For example, some transfers to the public sector are comparable to prices. Examples include, tuition at public universities, and fees for utilities provided by local governments. Governments also obtain resources by "creating" money and coins (for example, by printing bills and by minting coins), through voluntary gifts (for example, contributions to public universities and museums), by imposing penalties (such as traffic fines), by borrowing, and also by confiscating wealth. From the view of economists, a tax is a non-penal, yet compulsory transfer of resources from the private to the public sector, levied on a basis of predetermined criteria and without reference to specific benefit received.

In modern taxation systems, governments levy taxes in money; but in-kind and *corvée* taxation are characteristic of traditional or pre-capitalist states and their functional equivalents. The method of taxation and the government expenditure of taxes raised is often highly debated in politics and economics. Tax collection is performed by a government agency such as the Ghana Revenue Authority, Canada Revenue Agency, the Internal Revenue Service (IRS) in the United States, Her Majesty's Revenue and Customs (HMRC) in the United Kingdom or Federal Tax Service in Russia. When taxes are not fully paid, the state may impose civil penalties (such as fines or forfeiture) or criminal penalties (such as incarceration) on the non-paying entity or individual.

## **PURPOSES & EFFECTS**

The levying of taxes aims to raise revenue to fund governing or to alter prices in order to affect demand. States and their functional equivalents throughout history have used money provided by taxation to carry out many functions. Some of these include expenditures on economic infrastructure (roads, public transportation, sanitation, legal systems, public safety, education, health-care systems), military, scientific research, culture and the arts, public works, distribution, data collection and dissemination, public insurance, and the operation of government itself. A government's ability to raise taxes is called its fiscal capacity. When expenditures exceed tax revenue, a government accumulates debt. A portion of taxes may be used to service past debts. Governments also use taxes to fund welfare and public services. These services can include education systems, pensions for the elderly, unemployment benefits, and public transportation. Energy, water and waste management systems are also common public utilities.

## Effects can be divided in two fundamental categories

- Taxes cause an income effect because they reduce purchasing power to taxpayers.
- Taxes cause a substitution effect when taxation causes a substitution between taxed goods and untaxed goods.
  1. It changes the consumers' real income (less purchasing power)
  2. It raises the relative price of  $y$  good.

The income effect shows the variation of  $y$  good quantity given by the change of real income. The substitution effect shows the variation of  $y$  good determined by relative prices' variation. This kind of taxation (that causes substitution effect) can be considered distortionary. A tax effectively changes relative prices of products. Therefore, most economists, especially neoclassical economists, argue that taxation creates market distortion and results in economic inefficiency unless there are (positive or negative) externalities associated with the activities that are taxed that need to be internalized to reach an efficient market outcome. They have therefore sought to identify the kind of tax system that would minimize this distortion. Recent scholarship suggests that in the United States of America, the federal government effectively taxes investments in higher education more heavily than it subsidizes higher education, thereby contributing to a shortage of skilled workers and unusually high differences in pre-tax earnings between highly educated and less-educated workers.

Taxes can even have effects on labour supply: we can consider a model in which the consumer chooses the number of hours spent working and the amount spent on consumption. Let us suppose that only one good exists and no income is saved. Governments use different kinds of taxes and vary the tax rates. They do this in order to distribute the tax burden among individuals or classes of the population involved in taxable activities, such as the business sector, or to redistribute resources between individuals or classes in the population. Historically taxes on the poor supported the nobility; modern social-security systems aim to support the poor, the disabled, or the retired by taxes on those who are still working. In addition, taxes are applied to fund foreign aid and military ventures, to influence the macroeconomic performance of the economy (a government's strategy for doing this is called its fiscal policy; see also tax exemption), or to modify patterns of consumption or employment within an economy, by making some classes of transaction more or less attractive.

A state's tax system often reflects its communal values and the values of those in current political power. To create a system of taxation, a state must make choices regarding the distribution of the tax burden—who will pay taxes and how much they will pay—and how the taxes collected will be spent. In democratic nations where the public elects those in charge of establishing or administering the tax system, these choices reflect the type of community that the public wishes to create. In countries where the public does not have a significant amount of influence over the system of taxation, that system may reflect more closely the values of those in power.

## Types

The Organisation for Economic Co-operation and Development (OECD) publishes an analysis of the tax systems of member countries. As part of such analysis, OECD has developed a definition and system of classification of internal taxes, generally followed below. In addition, many countries impose taxes (tariffs) on the import of goods. Many jurisdictions tax the income of individuals and business entities, including corporations. Generally, the authorities impose tax on net profits from a business, on net gains, and on other income. Computation of income subject to tax may be determined under accounting principles used in the jurisdiction, which may be modified or replaced by tax-law principles in the jurisdiction. The incidence of taxation varies by system, and some systems may be viewed as progressive or regressive. Rates of tax may vary or be constant



(flat) by income level. Many systems allow individuals certain personal allowances and other non-business reductions to taxable income, although business deductions tend to be favored over personal deductions.

Personal income tax is often collected on a pay-as-you-earn basis, with small corrections made soon after the end of the tax year. These corrections take one of two forms: payments to the government, for taxpayers who have not paid enough during the tax year; and tax refunds from the government to those who have overpaid. Income-tax systems will often have deductions available that reduces the total tax liability by reducing total taxable income. They may allow losses from one type of income to count against another. For example, a loss on the stock market may be deducted against taxes paid on wages. Other tax systems may isolate the loss, such that business losses can only be deducted against business tax by carrying forward the loss to later tax years. In economics, a negative income tax (abbreviated NIT) is a progressive income tax system where people earning below a certain amount receive supplemental payment from the government instead of paying taxes to the government.

## **Capital gains**

Most jurisdictions imposing an income tax treat capital gains as part of income subject to tax. Capital gain is generally a gain on sale of capital assets—that is, those assets not held for sale in the ordinary course of business. Capital assets include personal assets in many jurisdictions. Some jurisdictions provide preferential rates of tax or only partial taxation for capital gains. Some jurisdictions impose different rates or levels of capital-gains taxation based on the length of time the asset was held. Because tax rates are often much lower for capital gains than for ordinary income, there is widespread controversy and dispute about the proper definition of capital.

## **Corporate**

Corporate tax refers to income tax, capital tax, net-worth tax or other taxes imposed on corporations. Rates of tax and the taxable base for corporations may differ from those for individuals or for other taxable persons.

## **Social-security contributions**

General government revenue, in % of GDP, from social contributions. For this data, the variance of GDP per capita with purchasing power parity (PPP) is explained in 20% by social contributions revenue. Many countries provide publicly funded retirement or health-care systems. In connection with these systems, the country typically requires employers and/or employees to make compulsory payments. These payments are often computed by reference to wages or earnings from self-employment. Tax rates are generally fixed, but a different rate may be imposed on employers than on employees. Some systems provide an upper limit on earnings subject to the tax. A few systems provide that the tax is payable only on wages above a particular amount. Such upper or lower limits may apply for retirement but not for health-care components of the tax. Some have argued that such taxes on wages are a form of "forced savings" and not really a tax, while others point to redistribution through such systems between generations (from newer cohorts to older cohorts) and across income levels (from higher income-levels to lower income-levels) which suggests that such programs are really tax and spending programs.

## **Payroll or workforce**

Unemployment and similar taxes are often imposed on employers based on total payroll. These taxes may be imposed in both the country and sub-country levels.

## Wealth

A wealth tax is a levy on the total value of personal assets, including: bank deposits, real estate, assets in insurance and pension plans, ownership of unincorporated businesses, financial securities, and personal trusts. Typically liabilities (primarily mortgages and other loans) are deducted, hence it is sometimes called a net wealth tax.

## Property

Recurrent property taxes may be imposed on immovable property (real property) and on some classes of movable property. In addition, recurrent taxes may be imposed on the net wealth of individuals or corporations. Many jurisdictions impose estate tax, gift tax or other inheritance taxes on property at death or at the time of gift transfer. Some jurisdictions impose taxes on financial or capital transactions.

## Property taxes

A property tax (or millage tax) is an ad valorem tax levy on the value of property that the owner of the property is required to pay to a government in which the property is situated. Multiple jurisdictions may tax the same property. There are three general varieties of property: land, improvements to land (immovable man-made things, e.g. buildings) and personal property (movable things). Real estate or realty is the combination of land and improvements to land. Property taxes are usually charged on a recurrent basis (e.g., yearly). A common type of property tax is an annual charge on the ownership of real estate, where the tax base is the estimated value of the property. For a period of over 150 years from 1695 the government of England levied a window tax, with the result that one can still see listed buildings with windows bricked up in order to save their owners money. A similar tax on hearths existed in France and elsewhere, with similar results. The two most common types of event-driven property taxes are stamp duty, charged upon change of ownership, and inheritance tax, which many countries impose on the estates of the deceased.

## Inheritance

Inheritance tax, estate tax, and death tax or duty are the names given to various taxes which arise on the death of an individual. In United States tax law, there is a distinction between an estate tax and an inheritance tax: the former taxes the personal representatives of the deceased, while the latter taxes the beneficiaries of the estate. However, this distinction does not apply in other jurisdictions; for example, if using this terminology UK inheritance tax would be an estate tax.

## Expatriation

An expatriation tax is a tax on individuals who renounce their citizenship or residence. The tax is often imposed based on a deemed disposition of all the individual's property. One example is the United States under the American Jobs Creation Act, where any individual who has a net worth of \$2 million or an average income-tax liability of \$127,000 who renounces his or her citizenship and leaves the country is automatically assumed to have done so for tax avoidance reasons and is subject to a higher tax rate.

## Transfer

Historically, in many countries, a contract needs to have a stamp affixed to make it valid. The charge for the stamp is either a fixed amount or a percentage of the value of the transaction. In most

countries, the stamp has been abolished but stamp duty remains. Stamp duty is levied in the UK on the purchase of shares and securities, the issue of bearer instruments, and certain partnership transactions. Its modern derivatives, stamp duty reserve tax and stamp duty land tax, are respectively charged on transactions involving securities and land. Stamp duty has the effect of discouraging speculative purchases of assets by decreasing liquidity. In the United States, transfer tax is often charged by the state or local government and (in the case of real property transfers) can be tied to the recording of the deed or other transfer documents.

## **Wealth (net worth)**

Some countries' governments will require declaration of the tax payers' balance sheet (assets and liabilities), and from that exact a tax on net worth (assets minus liabilities), as a percentage of the net worth, or a percentage of the net worth exceeding a certain level. The tax may be levied on "natural" or "legal persons."

## **Goods and services -Value added**

A value added tax (VAT), also known as Goods and Services Tax (G.S.T), Single Business Tax, or Turnover Tax in some countries, applies the equivalent of a sales tax to every operation that creates value. To give an example, sheet steel is imported by a machine manufacturer. That manufacturer will pay the VAT on the purchase price, remitting that amount to the government. The manufacturer will then transform the steel into a machine, selling the machine for a higher price to a wholesale distributor. The manufacturer will collect the VAT on the higher price, but will remit to the government only the excess related to the "value added" (the price over the cost of the sheet steel). The wholesale distributor will then continue the process, charging the retail distributor the VAT on the entire price to the retailer, but remitting only the amount related to the distribution mark-up to the government.

## **CONCLUSION**

The effects of income tax *reform* – revenue- and distributionally-neutral base-broadening, rate-reducing changes – build off of the effects of tax cuts, but are more complex. The effects of reductions in rates are the same as above. Broadening the base in a revenue-neutral manner will eliminate the effect of rate cuts on budget deficits. It will also reduce the impact of the rate cuts on effective marginal tax rates and thus reduce the impact on labor supply, saving, and investment. However, broadening the base will have one other effect as well; by reducing the extent to which the tax code subsidizes alternative sources and uses of income, base-broadening will reallocate resources toward their highest-value economic use and hence will raise the overall size of the economy and result in a more efficient allocation of resources. These effects can be big in theory and in simulations, especially for extreme policy reforms such as eliminating all personal deductions and exemptions and moving to a flat-rate tax. But there is little empirical analysis of broad-based income tax reform in the United States, in part because there has only been one major tax reform in the last fifty years. Still, there is a sound theoretical presumption – and substantial simulation results – indicating that a basebroadening, rate-reducing tax reform can improve long-term performance. The key, however, is not that it boosts labor supply, saving, or investment – since it raises the same amount of revenue from the same people as before – but rather that it leads to be a better allocation of resources across sectors of the economy by closing off targeted subsidies.

An admittedly less than fully scientific source of evidence is simply asking economists what they think. In a survey of 134 public finance and labor economists, the estimated median effect of the Tax Reform Act of 1986 on the long-term size of the economy was 1 percent (Fuchset al. 1998). Note that TRA 86 did not reduce public saving, so the growth effect was entirely due to changes in marginal tax rates and the tax base. The median response also suggested that the 1993 tax increases had no effect on economic growth. The 1993 act raised tax rates on the highest income households, but also reduced the deficit and thereby increased national saving. One strong finding from all of the analysis is that not all tax changes will have the same impact on growth. Reforms that improve incentives, reduce existing subsidies, avoid wind fall gains, and avoid deficit financing will have more auspicious effects on the long-term size of the economy, but in some cases may also create trade-offs between equity and efficiency. These findings illustrate both the potential benefits and the potential perils of income tax reform on long-term economic growth.

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# **Credit Card System & Its Uses- A Study Related on Credit Card and Its Major Impact on Economy**

Usman M\*

## **INTRODUCTION**

A credit card is a payment card issued to users (cardholders) to enable the cardholder to pay a merchant for goods and services based on the cardholder's promise to the card issuer to pay them for the amounts plus the other agreed charges. The card issuer (usually a bank) creates a revolving account and grants a line of credit to the cardholder, from which the cardholder can borrow money for payment to a merchant or as a cash advance. A credit card is different from a charge card, which requires the balance to be repaid in full each month. In contrast, credit cards allow the consumers to build a continuing balance of debt, subject to interest being charged. A credit card also differs from a cash card, which can be used like currency by the owner of the card. A credit card differs from a charge card also in that a credit card typically involves a third-party entity that pays the seller and is reimbursed by the buyer, whereas a charge card simply defers payment by the buyer until a later date.

## **HISTORY**

### **Edward Bellamy's Looking Backward**

The concept of using a card for purchases was described in 1887 by Edward Bellamy in his utopian novel Looking Backward. Bellamy used the term credit card eleven times in this novel, although this referred to a card for spending a citizen's dividend from the government, rather than borrowing, making it more similar to a debit card.

### **Charge coins, medals, and so on**

Charge coins and other similar items were used from the late 19th century to the 1930s. They came in various shapes and sizes; with materials made out of celluloid (an early type of plastic), copper, aluminum, steel, and other types of whitish metals. Each charge coin usually had a little hole, enabling it to be put in a key ring, like a key. These charge coins were usually given to customers who had charge accounts in department stores, hotels, and so on. A charge coin usually had the charge account number along with the merchant's name and logo. The charge coin offered a simple and fast way to copy a charge account number to the sales slip, by imprinting the coin onto the sales slip. This sped the process of copying, previously done by handwriting. It also reduced the number of errors, by having a standardized form of numbers on the sales slip, instead of various kind of handwriting style. Because the customer's name was not on the charge coin, almost anyone could use it. This sometimes led to a case of mistaken identity, either accidentally or intentionally, by acting on behalf of the charge account owner or out of malice to defraud both the charge account owner and the merchant. Beginning in the 1930s, merchants started to move from charge coins to the newer Charge-Plate.

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## Early charge cards

### *Charga-Plate*

The Charga-Plate, developed in 1928, was an early predecessor of the credit card and was used in the U.S. from the 1930s to the late 1950s. It was a 2 ½-by-1 ¼-inch (64 mm × 32 mm) rectangle of sheet metal related to Addressograph and military dog tag systems. It was embossed with the customer's name, city, and state. It held a small paper card on its back for a signature. In recording a purchase, the plate was laid into a recess in the imprinter, with a paper "charge slip" positioned on top of it. The record of the transaction included an impression of the embossed information, made by the imprinter pressing an inked ribbon against the charge slip. Charga-Plate was a trademark of Farrington Manufacturing Co. Charga-Plates were issued by large-scale merchants to their regular customers, much like department store credit cards of today. In some cases, the plates were kept in the issuing store rather than held by customers. When an authorized user made a purchase, a clerk retrieved the plate from the store's files and then processed the purchase. Charga-Plates speeded back-office bookkeeping and reduced copying errors that were done manually in paper ledgers in each store.

### *Air Travel Card*

In 1934, American Airlines and the Air Transport Association simplified the process even more with the advent of the Air Travel Card. They created a numbering scheme that identified the issuer of the card as well as the customer account. This is the reason the modern UATP cards still start with the number 1. With an Air Travel Card, passengers could "buy now, and pay later" for a ticket against their credit and receive a fifteen percent discount at any of the accepting airlines. By the 1940s, all of the major U.S. airlines offered Air Travel Cards that could be used on 17 different airlines. By 1941, about half of the airlines' revenues came through the Air Travel Card agreement. The airlines had also started offering installment plans to lure new travelers into the air. In October 1948, the Air Travel Card became the first internationally valid charge card within all members of the International Air Transport Association.

### **Early general purpose charge cards: Diners Club, Carte Blanche, and American Express**

The concept of customers paying different merchants using the same card was expanded in 1950 by Ralph Schneider and Frank McNamara, founders of Diners Club, to consolidate multiple cards. The Diners Club, which was created partially through a merger with Dine and Sign, produced the first "general purpose" charge card and required the entire bill to be paid with each statement. That was followed by Carte Blanche and in 1958 by American Express which created a worldwide credit card network (although these were initially charge cards that later acquired credit card features).

### *Usage*

A credit card issuing company, such as a bank or credit union, enters into agreements with merchants for them to accept their credit cards. Merchants often advertise which cards they accept by displaying acceptance marks – generally derived from logos – or this may be communicated in signage in the establishment or in company material (e.g., a restaurant's menu may indicate which credit cards are accepted). Merchants may also communicate this orally, as in "We take (brands X, Y, and Z)" or "We don't take credit cards".

### *Features*

As well as convenient credit, credit cards offer consumers an easy way to track expenses, which is necessary for both monitoring personal expenditures and the tracking of work-related expenses for

taxation and reimbursement purposes. Credit cards are accepted in larger establishments in almost all countries, and are available with a variety of credit limits, repayment arrangements. Some have added perks (such as insurance protection, rewards schemes in which points earned by purchasing goods with the card can be redeemed for further goods and services or cashback).

### ***Consumers' limited liability***

Some countries, such as the United States, the United Kingdom, and France, limit the amount for which a consumer can be held liable in the event of fraudulent transactions with a lost or stolen credit card.

## **SPECIALIZED TYPES**

### **Business credit cards**

Business credit cards are specialized credit cards issued in the name of a registered business, and typically they can only be used for business purposes. Their use has grown in recent decades. In 1998, for instance, 37% of small businesses reported using a business credit card; by 2009, this number had grown to 64%. Business credit cards offer a number of features specific to businesses. They frequently offer special rewards in areas such as shipping, office supplies, travel, and business technology. Most issuers use the applicant's personal credit score when evaluating these applications. In addition, income from a variety of sources may be used to qualify, which means these cards may be available to businesses that are newly established. In addition, most major issuers of these cards do not report account activity to the owner's personal credit unless there is a default. This may have the effect of protecting the owner's personal credit from the activity of the business. Business credit cards are offered by almost all major card issuers—like American Express, Visa, and MasterCard in addition to local banks and credit unions. Charge cards for businesses, however, are currently only offered by American Express.

### **Secured credit cards**

A secured credit card is a type of credit card secured by a deposit account owned by the cardholder. Typically, the cardholder must deposit between 100% and 200% of the total amount of credit desired. Thus if the cardholder puts down \$1,000, they will be given credit in the range of \$500–1,000. In some cases, credit card issuers will offer incentives even on their secured card portfolios. In these cases, the deposit required may be significantly less than the required credit limit, and can be as low as 10% of the desired credit limit. This deposit is held in a special savings account. Credit card issuers offer this because they have noticed that delinquencies were notably reduced when the customer perceives something to lose if the balance is not repaid.

The cardholder of a secured credit card is still expected to make regular payments, as with a regular credit card, but should they default on a payment, the card issuer has the option of recovering the cost of the purchases paid to the merchants out of the deposit. The advantage of the secured card for an individual with negative or no credit history is that most companies report regularly to the major credit bureaus. This allows building a positive credit history.

Although the deposit is in the hands of the credit card issuer as security in the event of default by the consumer, the deposit will not be debited simply for missing one or two payments. Usually the deposit is only used as an offset when the account is closed, either at the request of the customer or due to severe delinquency (150 to 180 days). This means that an account which is less than 150 days delinquent will continue to accrue interest and fees, and could result in a balance which is much higher than the actual credit limit on the card. In these cases the total debt may far exceed

the original deposit and the cardholder not only forfeits their deposit but is left with an additional debt. Most of these conditions are usually described in a cardholder agreement which the cardholder signs when their account is opened.

Secured credit cards are an option to allow a person with a poor credit history or no credit history to have a credit card which might not otherwise be available. They are often offered as a means of rebuilding one's credit. Fees and service charges for secured credit cards often exceed those charged for ordinary non-secured credit cards. For people in certain situations, (for example, after charging off on other credit cards, or people with a long history of delinquency on various forms of debt), secured cards are almost always more expensive than unsecured credit cards.

## Prepaid cards

A "prepaid credit card" is not a true credit card, since no credit is offered by the card issuer: the cardholder spends money which has been "stored" via a prior deposit by the cardholder or someone else, such as a parent or employer. However, it carries a credit-card brand (such as Discover, Visa, MasterCard, American Express, or JCB) and can be used in similar ways just as though it were a credit card. Unlike debit cards, prepaid credit cards generally do not require a PIN. An exception are prepaid credit cards with an EMV chip. These cards do require a PIN if the payment is processed via Chip and PIN technology.

After purchasing the card, the cardholder loads the account with any amount of money, up to the predetermined card limit and then uses the card to make purchases the same way as a typical credit card. Prepaid cards can be issued to minors (above 13) since there is no credit line involved. The main advantage over secured credit cards (see above section) is that the cardholder is not required to come up with \$500 or more to open an account. With prepaid credit cards purchasers are not charged any interest but are often charged a purchasing fee plus monthly fees after an arbitrary time period. Many other fees also usually apply to a prepaid card. Prepaid credit cards are sometimes marketed to teenagers for shopping online without having their parents complete the transaction. Teenagers can only use funds that are available on the card which helps promote financial management to reduce the risk of debt problems later in life. Prepaid cards can be used globally. The prepaid card is convenient for payees in developing countries like Brazil, Russia, India, and China, where international wire transfers and bank checks are time consuming, complicated and costly. Because of the many fees that apply to obtaining and using credit-card-branded prepaid cards, the Financial Consumer Agency of Canada describes them as "an expensive way to spend your own money". The agency publishes a booklet entitled Pre-paid Cards which explains the advantages and disadvantages of this type of **prepaid card**.

## Digital cards

A digital card is a digital cloud-hosted virtual representation of any kind of identification card or payment card, such as a credit card. Visa, MasterCard, American Express are card-issuing entities that set transaction terms for merchants, card-issuing banks, and acquiring banks. The credit card issuer issues a credit card to a customer at the time or after an account has been approved by the credit provider, which need not be the same entity as the card issuer. The cardholders can then use it to make purchases at merchants accepting that card. When a purchase is made, the cardholder agrees to pay the card issuer. The cardholder indicates consent to pay by signing a receipt with a record of the card details and indicating the amount to be paid or by entering a personal identification number (PIN). Also, many merchants now accept verbal authorizations via telephone and electronic authorization using the Internet, known as a card not present transaction (CNP).



Electronic verification systems allow merchants to verify in a few seconds that the card is valid and the cardholder has sufficient credit to cover the purchase, allowing the verification to happen at time of purchase. The verification is performed using a credit card payment terminal or point-of-sale (POS) system with a communications link to the merchant's acquiring bank. Data from the card is obtained from a magnetic stripe or chip on the card; the latter system is called Chip and PIN in the United Kingdom and Ireland, and is implemented as an EMV card. For card not present transactions where the card is not shown (e.g., e-commerce, mail order, and telephone sales), merchants additionally verify that the customer is in physical possession of the card and is the authorized user by asking for additional information such as the security code printed on the back of the card, date of expiry, and billing address.

Each month, the cardholder is sent a statement indicating the purchases made with the card, any outstanding fees, the total amount owed and the minimum payment due. In the US, after receiving the statement, the cardholder may dispute any charges that he or she thinks are incorrect (see 15 U.S.C. § 1643, which limits cardholder liability for unauthorized use of a credit card to \$50). The Fair Credit Billing Act gives details of the U.S. regulations. Many banks now also offer the option of electronic statements, either in lieu of or in addition to physical statements, which can be viewed at any time by the cardholder via the issuer's online banking website. Notification of the availability of a new statement is generally sent to the cardholder's email address. If the card issuer has chosen to allow it, the cardholder may have other options for payment besides a physical check, such as an electronic transfer of funds from a checking account. Depending on the issuer, the cardholder may also be able to make multiple payments during a single statement period, possibly enabling him or her to utilize the credit limit on the card several times.

## Advantages and Disadvantages of Credit Cards

Like other financial tools and services, credit cards come with many advantages and disadvantages. It's critical to understand the details before you sign up for any credit card. Otherwise, you may end up with a card that traps you instead of setting you free.

<b>Advantages</b>	<b>Disadvantages</b>
<ul style="list-style-type: none"> <li>• <b>Purchasing Power:</b> Credit Cards enable users to make big ticket purchases they might not otherwise be able to afford.</li> <li>• <b>Rewards:</b> Many cards offer rewards programs that will accrue points, discounts, or other benefits like frequent flyer miles.</li> <li>• <b>Convenience:</b> Credit cards reduce the need to carry cash. Most retailers accept credit cards and they are pretty much required for online purchases.</li> <li>• <b>Trackability:</b> The electronic record keeping that comes with credit cards make it easy to track your spending and identify fraud.</li> <li>• <b>Use during an emergency:</b> There are times when money is the simple solution to an emergency. If you get hit with an unexpected expense, credit cards can be the quick and easy solution you need.</li> <li>• <b>Builds credit history:</b> Responsible use of a credit card over time builds your credit history, qualifying you for better interest rates and other financial benefits.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Overspending:</b> Credit cards can make life easier, but they can also make overspending easier as well. With a credit card, you're spending money you don't necessarily have yet. If you're not careful, this can quickly lead to unexpected debt.</li> <li>• <b>Interest and fees:</b> Using credit is essentially borrowing. And you're not borrowing for free. Mismanaging a credit card can lead not only to a high balance, or maxed-out card, but also to debt in the form of interest and fees.</li> <li>• <b>Fraud:</b> Credit cards (and other electronic forms of payment) carry unique dangers. Credit cards can be stolen, their numbers can be copied, and they can be used to steal your money and identity.</li> <li>• <b>Mounting Debt:</b> If you carry a balance on your credit card from month to month, it can be very easy for charges and interest to rack up. Many people don't expect credit cards to be gateways to extra debt, but if you're not careful, that's exactly what happens.</li> </ul>

## CONCLUSION

A debit card (also known as a bank card, plastic card or check card) is a plastic payment card that can be used instead of cash when making purchases. It is similar to a credit card, but unlike a credit card, the money is immediately transferred directly from the cardholder's bank account when performing any transaction. Some cards might carry a stored value with which a payment is made, while most relay a message to the cardholder's bank to withdraw funds from a payer's designated bank account. In some cases, the primary account number is assigned exclusively for use on the Internet and there is no physical card.

In many countries, such as most of Western Europe, the use of debit cards has become so widespread that their volume has overtaken or entirely replaced cheques and, in some instances, cash transactions. The development of debit cards, unlike credit cards and charge cards, has generally been country specific resulting in a number of different systems around the world, which were often incompatible. Since the mid-2000s, a number of initiatives have allowed debit cards issued in one country to be used in other countries and allowed their use for internet and phone purchases.

Debit cards usually also allow instant withdrawal of cash, acting as an ATM card for this purpose. Merchants may also offer cash back facilities to customers, so that a customer can withdraw cash along with their purchase. A credit card is a thin rectangular slab of plastic issued by a financial company, that lets cardholders borrow funds with which to pay for goods and services. Credit cards impose the condition that cardholders pay back the borrowed money, plus interest, as well as any additional agreed-upon charges. The credit company provider may also grant a line of credit (LOC) to cardholders, enabling them to borrow money in the form of cash advances. Issuers customarily pre-set borrowing limits, based on an individual's credit rating. A vast majority of businesses let the customer make purchases with credit cards, which remain one of today's most popular payment methodologies for buying consumer goods and services

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# Impact of Globalization and Privatization on Higher Education in India

Simardeep Kaur\*

## ABSTRACT

Education is a Nation's strength. It is the strongest tool for bringing personal, social, economic and cultural developments in the society. Indian Higher Education system is the third largest in the world, next to the United States and China. Since Independence, India as a developing nation is contentiously progressing in the education field.

This is an era of Globalization and Privatization of Indian Higher Education system. At World level, India produces the largest scientists and engineers, but reality is that India is facing a severe shortage of skilled human resources. The Quality of Higher Education in India is significantly poor as compared to major developing nations of the world. So India need well skilled and highly educated people who can drive our economy forward.

## INTRODUCTION

Educational system is the backbone of the development of any country. Education is a continuous process necessary for the full and harmonious development of individual as well as of society. It brings betterment and prosperity in the life of the people and nation. Knowledge has emerged as a leading source of economic growth. The economies having good quality human resources and well- developed network of knowledge-driven institutions are thriving across the globe.

## Higher Education in India

The Indian Higher Education sector has expanded at a phenomenal rate in the last decades. Government has made special efforts in this field. In a higher education institute, where teachers and learners can make contact, that researchers find encouragement and direction and that many of the ways to contribute to the larger community and identified and explored.

In the past years, Higher Education in India has witnessed rapid and impressive growth. India's Higher Education system is the world third largest in terms of students, next to United States and China. India's Higher Education sector has witnessed a tremendous increase in the number of universities/ university level institutions and colleges since independence.

As of 2016, India has 799 universities, with a break up of 44 central universities, 540 state universities, 122 deemed universities, 90 private universities, 5 institutions established and functioning under the State Act and 75 Institutions of National Importance which includes AIIMS, IIT's, IIST and NIT's among others. Distance Learning and Open Education is also a feature of Indian higher education system. Indira Gandhi National Open University is the largest university in the world by number of students.

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The main governing body at the tertiary level is the University Grants commission, which enforces its standards, advises the government and helps coordinate between the centre and state. Distance Learning and Open Education also looked after by the Distance Education Council.

## **PRIVATIZATION**

Privatization means change of ownership of an enterprise from public (government) to private hands. To meet the challenge of expansion, the Indian state provided for greater participation of private sector in education in the wake of economic reforms. The involvement of private sector in higher education has seen drastic changes in the field. Consequently, private sector ventured into the field of education in a big way leading to mushrooming of private education institutions all around. Privatization encourages the individual and society to establish schools, colleges and private universities to meet the growing demand for education. Privatization of education has the potential to improve the quality of education as well as to reduce the cost. The private sector has penetrated especially the technical and professional streams because of huge demand for them.

The rise of private enterprise in education has no doubt made education accessible to a much larger number of people than before. However, it has done so only for those who can afford to pay its high cost in the form of fee, donations and spurious charges. But, it has not much benefited for the poor students. In this way privatization in higher education has been excluding most of disadvantaged economic and social groups. Most of the private corporate houses have entered into the field of education to make money with little concern for the quality of education, so the quality of education is dispersed somewhere. Due to privatization a lot of universities/ institutes particularly in professional courses students with low percentages or scores getting admissions. Here the admission criteria are not high and students with a low I.Q. are also getting admissions and these institutions do not hesitate to admit students with poor credentials. Private sector invests only in sunrise disciplines which has good potential for profit but neglects quality of education.

No doubt, there are quality norms laid down by the Institution granting approval and affiliation to the newly set up institutions and also evaluated from time to time by National Assessment and Accreditation Council (NAAC) and National Board of Accreditation (NBA). In spite of these, accrediting agencies, the cases of manipulating the norms in favour of private institutions are widely reported.

Research is the most important input for quality education but it has not received that importance in Indian Higher Education institutions, particularly in the private sector.

## **GLOBALIZATION**

Globalization is defined as free movements of goods, services, capital, people and information technology across national boundaries. It creates both economic as well as social relations within and across countries. It is a process, which has affected many areas of human life. The globalization of higher education is yet another growing trend. For the last many years Indian students have been going abroad to get foreign degrees. Recently many of the foreign institutions have opened their campuses in India. They are offering vocational courses in collaboration with their Indian affiliates. The effect of globalization on education bring rapid developments in technology and communications are foreseeing changes within learning system across the world as ideas, values and knowledge, changing the role of students and teachers and producing a shift in society from industrialization towards an information based society.

Globalization has a multi-dimensional impact on the system of education. It promotes new tools and techniques in this area like E- Learning, flexible learning, distance education programs and overseas training. It also shaping young children of a country into global citizens with a broad

range of skills and knowledge to apply to a competitive information based society. Globalization also facilitates international collaboration and cross-cultural exchange.

At this International level competition increases day by day. The competition will essentially be for offering quality education recognized at the international level and relevant to the local needs. Here the major issue is how to raise the quality and standards of Indian education and make it globally competitive. India provides highly skilled people to other countries therefore, it is very easy for India to transfer our country from developing nation to developed nation.

## **CONCLUSION**

The quantitative explosion in higher education institutions has not been matched by the quality of education they provide. Infact, the gap between quantity and quality is so large that it stands as one of the obstacle in the way of India. So, government must ensure access to higher education by weaker section of society, increase public expenditure on higher education and provide high skilled people at national level. Standards of education could be achieved through a balanced relationship between public, private and at globally level. Indian government needs to chalk out more ambitious plans to heighten the glory of our institutions and improves its credibility.

# Role of Libraries in Distance Education

Simardeep Kaur\*

## DISTANCE EDUCATION: MEANING

The concept of education has undergone a tremendous change these days with the advancement of science and technology. The need for extending educational opportunities to all has led to the birth of alternative models variously referred to as 'non-formal' or 'distance education' or 'open education' system. The meaning of this system is where students and teachers meet face to face rarely, if at all, and communicate with one another by such means as correspondence, radio and television.

According to Daniel (2001), distance education has only recently established its credibility and has done so primarily at the university level. The philosophy of distance education is to reach the unreached and take care of the numbers by accommodating those who cannot gain entry into conventional system.

Distance education being mainly a self learning system, library support is indispensable to study independently. Its ability to provide greater access to education.

## ORIGIN

The growth of distance learning, from its origins in correspondence education in the second quarter of the nineteenth century through the growth of private correspondence schools and colleges, to the present level of investment in distance education on the part of many publicly – funded institutions and governments.

## DISTANCE EDUCATION IN INDIA

The Education Commission, Government of India, recommended the provision of access to higher education through correspondence courses. In 1962, University of Delhi started correspondence courses as a pilot project. The success of this experiment encouraged other universities to introduce correspondence courses. At present there are more than 300 universities, out of which 106 universities are having Distance Education Institutes including 13 open universities. It discusses the requirement of students in relation to material, facilities, information as well as user services. Some of the open universities are:

1. Dr. B.R. Ambedkar Open University, Hyderabad, 1982
2. Indira Gandhi National Open University, New Delhi, 1985
3. Vardhman Mahaveer Open University, Kota, 1987
4. Yashwantrao Chavan Maharashtra Open University, Maharashtra, 1989
5. Nalanda Open University, Bihar, 1989
6. Madhya Pradesh Bhoj Open University, Madhya Pradesh, 1993
7. Babasaheb Ambedkar Open University, Gujarat, 1994
8. Karnataka Open University, Karnataka, 1996

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## AIMS AND OBJECTIVES OF DISTANCE EDUCATION

1. To provide educational facilities to the masses, in particular the dropouts.
2. To cater to a variety of educational needs.
3. To serve as an alternative to the formal system of education.
4. To spread knowledge and skills.
5. To provide fresh opportunities to those who have not had the privilege of university education.
6. To facilitate the working professional in different libraries to enhance and upgrade their professional knowledge and understanding.
7. To provide opportunities to those who are unable to undergo formal education due to various reasons.
8. To encourage those library professionals who need higher qualifications for their career development.
9. To equalize the professionals educational opportunities that are in dire need.
10. To provide self support and less expensive professional education to the professionals working in remote areas.

The area of LIS education was also influenced by the distance education environment. Though, there was initial opposition of LIS education through distance mode, but gradually it has been accepted by the professionals as a reality.

Two specialized courses are also being offered through this mode: one is Information Science and System course by Birla Institute of Science and Technology, Pilani; and the other is Diploma in Library Automation and Networking by the University of Hyderabad.

## CHARACTERISTICS

Distance Education institutions have two distinct characteristics, viz., academic and industrial. The 'Academic' refers to the development and preparation of course material and 'Industrial' is concerned with production and distribution of these materials. There is little freedom to formulate their own courses. External programmes run by Australian universities and correspondence courses in India are the best examples of this model. The British Open University is regarded as the leader in this field. Its establishment and the high quality work have inspired many other countries like West Germany, Spain, Canada, China, Japan, Korea, India, Sri Lanka, Pakistan, Indonesia, Nigeria etc.

## ROLE OF LIBRARIES IN DISTANCE EDUCATION

The libraries of today are dynamic social agencies for effective and efficient dissemination of information, knowledge and ideas. A public library is the nucleus of the community's intellectual life. An academic institution and special library provides the life-blood to Government departments as well as industrial organizations. The role of the library in distance education universities therefore should be more important. This is because the teacher and students are far away from each other and the instruction is imparted through some media. One of the aim of this system is to stimulate the students to do self study based on instructions he receives and there is no other place than the library where he can pursue such study and get all the information he requires. Besides, the philosophy of distance education is effective dissemination of information and knowledge by a diversity of methods including the use of modern communication technology which provides the opportunity for higher education to a large segment of the population. This can be achieved through effective network of libraries. In a nutshell, the quality of distance education is greatly linked with libraries. The information collected and disseminated by libraries decides the quality of teaching-learning process in distance education institution.



To make the distance education an effective learning based on home study, there is need to focus attention towards libraries. Resource sharing is the only means to cope up with the tremendous task of providing library and information facilities to masses of learners by ensuring access to a wide range of resources already available at various libraries. This can be possible only through the joint efforts of libraries their facilities and resources. Library Corner for Distance Learners (LCDL) can be established at academic libraries having adequate space, manpower, and resources with the help of distance teaching institutions.

The libraries at the headquarters and regional centers should provide inter-library loan services by making arrangement with various libraries. Inter-library loan service helps one library to borrow what it lacks from another library.

## University Libraries

University libraries and study center libraries have a prominent role to play in distance mode education. Membership of the university and study center libraries is open to all students of higher education including distance and correspondence education. Documents in the library are made available for consultation in the library and on loan for home use.

Distance education should establish inter-library loan arrangement with the university libraries so as to borrow the required books for their research scholars. Thus these libraries are able to widen the frontiers of service to distance education institutions.

Branch or extension libraries may also be established by the universities in the small towns and cities for the use of public. The institutes of distance education should provide financial assistance to these libraries to acquire library material especially meant for distance learners. Books from university library may be even temporarily lent to the local library authorities for some period.

Reference service is the personal service rendered by the library staff to the readers in their use of the library. It involves all those activities for establishing contact between the right book and the right reader at the right time.

## College Libraries

The college libraries should also similarly, extend their facilities to students of distance education especially at the under graduate level. The UGC and the universities can offer special financial assistance to some selected colleges for this purpose. The education level of the students of distance education is usually such as can be satisfactorily met by the sources of college libraries. Therefore, instead of developing new infrastructure to serve the students of distance education, the existing college libraries with their resources can be utilized effectively in the following areas:

- (i) **Reading room facility:-** College libraries may provide reading room facility to the students of distance education, where they can sit and read their material at the convenience and pace.
- (ii) **Document facility:-** The courses offered in colleges and in distance education are most often similar. Therefore, there will not be any need to develop an exclusive document collection for the students of distance education. College libraries can supplement the distance education study material by their document in local language, since it is very essential in a situation where the students find it difficult to grasp the contents of the study material which are mostly in English.
- (iii) **Contact point:-** College library can be used as a contact point for students and the counseling staff. These staff can have the study centre as their head office and move from place to place to meet the students of distance education at a fixed time and place to offer educational and administrative help. Thus college libraries are the ideal contact point for such purposes.

- (iv) **Guidance:-** College staff members can have part time responsibilities to the educational needs of the students of distance education. They can use the college library for their tutorial purposes.
- (v) **Information service:-** Information regarding the programmes and facilities available through distance education mode may be acquired by college libraries, and they can encourage and guide the students to continue their studies under distance education programmes.
- (vi) **Mutual help:-** There will be mutual help between college libraries and distance education institutions. Distance education institutions can provide funds for the overall development of the college libraries.

## MULTIMEDIA USED IN DISTANCE EDUCATION

In this mode of education, students have no face-to-face contact and physical contact with their teachers or the institutions. The physical separation of the learner from the teacher means that the latter must teach using some kind of media which allows one to see the students or talk to them at distance. The majority of the media used in print, audio-cassettes, video-cassettes, electronic-mail, telephone, two way radio, linkage of computers, T.V. etc. In pure distance education, there is no physical location where teachers, administrative staff and learners can interact.

Audio and video cassettes are very vital for the success of distance education. However, technologies like the radio and even television are easily accessed by today's learners, and study centers are equipped with some of the facilities and internet services.

## ROLE OF ICT AND WEB TECHNOLOGY IN DISTANCE EDUCATION

Multimedia approach to providing instructions made possible by ICT and can challenge the monopoly of the print medium. Moreover, it helps in developing opportunities for interactivity, a feature of the conventional system. Instructions through electronic media are maintained mostly in a supplementary mode. Web based instructions provide learners with opportunities to question, seek and gain education in a meaningful way. We have entered the 21<sup>st</sup> century, people's horizons have been extended yet again with the establishment of the World Wide Web. Through Web technology the following can be created.

- (i) Home page in Web
- (ii) Web-oriented ODL
- (iii) HTML in Web
- (iv) Internal News Groups in Web
- (v) Web quest

## DISTANCE EDUCATION NETWORKS (DEN)

In view of the number of universities and other institutions providing distance education, it is proposed to set up a DEN. The network of distance universities in the country could dramatically optimize the choice of subjects available to students in the emerging system of education network of libraries attached to the distance education institutions will be of much benefit. Existing libraries attached to various academic institutions from their parental organizations and throw the resources of these libraries open to the patrons of distance education programmes at large who want to do a serious reading.

## CONCLUSION

Distance education being essentially self education, library and information facilities to distance learners play an effective role in this regard and provide all type of facilities to the students of distance education which they request. As described above by providing interactive material and access to technology the quality of distance education is likely to improve. This will also give an opportunity to the providers of distance education material to improve the quality of the learning components. The new technology is not only capable of overcoming the barriers that distance presents, but also change the very nature of the instructional process. It is, therefore, necessary to strengthen learner support services to reduce dropouts, and ensure better learning to make gradual progress towards the integration of ICT developing a network.

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# E-Publishing: Changing Information Environment

Simardeep Kaur\*

## ABSTRACT

Electronic publishing is providing all material in digital/computerized form. Electronic publishing is likely to replace certain categories of book and journal publication. The key factors that affect the possibility of this happening are the possibility of rapid publication, rapid up-dating and the economics of electronic distribution. Discusses about advantages and disadvantages of e-publishing as well as its impact on changing information environment as a result of emerging Digital Library.

**Keywords:** Publishing Technology, E-Publishing, Information Environment, Electronic Library, Electronic Journals, Electronic Database

## INTRODUCTION

Electronic publishing includes the digital publication of e-books and electronic articles, and the development of digital libraries and catalogues. Electronic publishing has become common in scientific publishing, where scientific journals are in the process of being replaced by electronic publishing. Although network distribution is now-a-days strongly associated with electronic publishing, there are many non network electronic publications such as Encyclopedias on CD and DVD, as well as technical and reference publications relied on by mobile users and others without reliable and high speed access to a network.

Electronic publishing is increasingly popular in words of fiction as well as scientific articles. "Electronic publishing" is primarily used today to refer to the current offering of online and web-based publisher. The term describes the development of new forms of production, distribution and user interaction in regard to computer-based production of text and other interactive media.

Traditional paper-based publishers have begun to enter the E-book market and many established E-publishers are connected for their survival. Once text could be put in digital form, and dissemination made easy by the Internet, e-publishing became an exciting prospect.

Electronic publishing, which was considered the wave of the future, is here and hence we can say that the future is here. This concept is already making waves at various levels, making its presence felt at the world of education with institution's websites, electronic journals, digital library initiatives, and archives at the academic and non-academic levels. The concept of distance learning will also be highly dependent on the availability of electronic content for its success and electronic publishing will be a rich source for distance learning. The term "electronic publishing" is one of those popular buzzwords that cover a multitude of things.

"Electronic"- one where the text is read on and or printed form, the end users computer rather than as print on paper. E-publishing includes not only on-line publishing but also CD-ROM and related technologies such as CDI. Electronic publishing is an increasingly important means of publishing with significant differences from traditional ink or dead trees approach.

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Electronic publishing, defined broadly, encompasses the creation and access to digital publications, the ability to deliver print-on-demand service, the support of electronic commerce and the guarantee of a well maintained, permanent digital archive or some other form of document preservation.

Cost of scientific journal literature, have encouraged librarians and administrators to view electronic publishing as a cost effectiveness alternative to traditional paper publications. The shift to a world in which the primary mode of scholarly exchange and communication of research findings is digital will profoundly impact libraries, the university, and scholarly publishers. Electronic publishing promises both intellectual and economic benefit for higher education.

Due to the emergence of a new technology mass radio broadcasting, television, rise of the computer, Internet and World Wide Web all affects the publishing before electronic.

## **CHANGING PUBLISHING TECHNOLOGY**

The increasing usage of the Internet is the major cause for the rise of web- based publishing by the academic community. Over the past few years, there have been significant changes, a major change is the technology necessary for electronic – publishing and multimedia presentations – both hardware and software has gotten dramatically faster, better and cheaper. With every passing day we see the birth of a new publishing format. Faster publishing time for accepted manuscripts. Rather than waiting up to two years for manuscript to see print, e-publishing generally publishes work within a few weeks to a few months after acceptance.

The evolution of a new format requires re-working of the entire document. With the arrival of new formats, the older formats become obsolete, and date caught in these obsolete formats is called as 'legacy date format', which ends in costly conversation to the new format. Now, evolving at a fast rate and will continue to progress still further in view of the changing information environment.

## **USERS NEEDS**

Different users want different views of the same information, different document orders, formatting, search functionality etc.

## **CHARACTERISTICS OF ELECTRONIC PUBLISHING**

Electronic publishing has very specific non-book characteristics that distinguish it from print publications:

- Electronic publications can be produced and disseminated very rapidly. Once a page of text has been coded with HTML tags it can be published immediately, the book takes much longer to produce and distribute.
- An electronic text can be updated and corrected with the same immediately, whereas a book must either go through a second edition or if the error is caught in time, have an erratum slip inserted.
- Electronic publication can be made collaborative and interactive, involving either several "authors" or authors and readers
- Electronic publications can be disseminated world-wide without the need for separate rights negotiations for different countries and without the costs of distribution or reprinting.
- Through effective, electronic interaction with the buyer or user of an electronic publication, the producer can collect valuable market research data very cheaply.
- E-publication is dramatically cheaper than paper publishing as well as better data storage and maintenance.

- No title changes unless the publisher already has one with that name.
- All books are available anywhere in the world, none of those confusing “foreign rights” issues.
- Books are available 24 hours a day. The reader never has to leave their computer to browse, buy and receive their books.

## DISADVANTAGES

- Electronic publishing still reaches only a minority of potential users or customers.
- Electronic publishing demands access to relatively advanced technology on the part of both the procedure and consumer of information or entertainment, even the base level of provision is still expensive for the ordinary citizen.
- The technology is still, to a significant degree, because it is uncomfortable to read it on screen for longer time to many people.
- The technology consumes a greater amount of energy in its use than the book.

## ELECTRONIC LIBRARY

An Electronic library is a type of service that allows users, without actually stepping into the library, to read library books and conduct research at home, in the office or at school, using the Internet.

A library which provides primary and secondary information electronically through communications networks and the basis for this purpose. The aim of this library is to provide digitized resources at any time, at any place to the users over the Internet. The process of electronic is a major one involving much labor and expense. Works published electronically have an ISBN number, just like printed books. This means anyone can walk into a storefront bookstore and order an electronic copy of the book.

## ELECTRONIC JOURNALS

Electronic Journals are also growing in number very rapidly, particularly as the established print publishers begin to transfer their journals to the Internet. There are many journals which are electronically published and have its websites. The websites provide full text of articles without any access restrictions. Electronic journals also provide Index and Abstracts of journals, some journals are accessible at free of cost and some are paid subscription. Beginning from late 1990s many journals from India started producing the electronic version.

Electronic publishing of journals of Science is more than others as compare to Social Sciences and Arts and others. Most of the foreign author’s articles available at websites rather than Indian authors. Due to the paid subscriptions, these journals have limited visibility. With this limited visibility, articles published in the Indian journals are cited less frequently than their western counterparts. Here include only those journals which provide free online access to the complete or portion of the journal.

- Journal of Electronic Publishing (<http://www.press.umich.edu>)
- D-Lib Magazine (<http://www.dlib.org>)
- Public Access Computer Systems Review (<http://info.lib.uh.edu>) Online (<http://www.infotoday.com/online>) E-Content (<http://www.ecmar.net>)
- Journal of Postgraduate Medicine
- Pramana- Journal of Physics
- SADHANA- Academy Proceedings in Engineering Science

## List of Indian E-Journals

- Chartered accountant Journal
- Bombay Hospital Journal
- Indian Journal of Pediatrics
- Current Science
- Journal of Astrophysics and Astronomy

## ELECTRONIC THESES AND DISSERTATIONS (ETD'S)

Electronic theses and dissertations works contain valuable content, including focused literature reviews and details on research, which are available anywhere. Electronic these and dissertations immediately accessible and simultaneously more than one or two readers uses the same data. Software are the economical way to save digital content for further generations. Institutions in India started using variety of open source archiving solutions like Green Stone, E-Print, DSpace etc. since 2000. Association of Indian Universities started publishing of Doctoral Bibliographies in all subjects and Theses of the month column through its weekly publication "University News".

## ELECTRONIC DATABASE

In the brilliant time collection of Indian Libraries in various subjects science and engineering is very high in book form as well as in electronic form. This will help to greater access to the users in both bibliographic and other text. A database is an integrated collection of logically related records or files consolidated into a common pool that provides data for one or multiple uses. A database management system (DBMS) consists of Software that organizes the storage of data. A DBMS controls the creation, maintenance, and use of the database storage structures of organizations and of their end users. One way of classifying databases involves the type of content, for example: bibliographic, full-text, numeric, and image. The data in a database is organized according to a database model. As of 2009 these databases store detailed data needed to support the operations of the entire organization. They are also called subject-area databases (SADB), transaction databases, and production databases. These are all examples:

- Customer databases
- Personal databases
- Inventory databases

## VALIDATION AND AUTHENTICATION

Validation procedures to electronic material and of measures for guaranteeing subsequently its integrity. The professional future of electronic only journals will be ensured when learned societies and evaluation committees effectively taken into account the corresponding publications at the same level as referred articles on paper.

Authentication of originators (authors, institutions or organizations) will become an increasingly critical issue with the electronic material.

## COPYRIGHT

At a time when authors/creators of electronic documents are increasingly worried about the easy possible alteration of their work. Copyright are also extremely important and jurists are busy setting up references for the computerized material. Particularly, in this case, there may be variations from

country to country when the law already exists. Whether offering material on-line, displaying material on-screen, and storing material temporarily are acts subject to the usual copyright protection. Within the provision of the copyright law, Libraries should be able to provide scholarly electronic information to their users, share it through Inter library loan procedures, and preserves it. Scholars should be able to reuse this information at least as freely as they do today for printed material.

## CURRENT PROBLEMS

Due to the advantages, there are such problems in electronic publishing. i.e.

- **Hardware Costs:** E-publishing must be read on the computer or in specialized E-readers and most E-book readers are still too expensive.
- **Limited range of titles:** Lists are steadily increasing, but only a small fraction of print books are also available as e-books.
- **Quality filters are unclear:** Traditional publishers builds on specialists skills- MS selection, editing, proofing, typesetting, illustrations etc. adding a quality filter to the final product. Buyers of E-books do not have these reassurances.
- **Preferences for printed books:** Despite advantages of backlit pages, graphics and multimedia, electronic readers are not yet as comfortable as the traditional paper book.

Despite these problems, E-publishing can be a good way for a new writer to gain. It is ideal for up-dated frequently and also save money. An added advantage here is that clickable.

## CONCLUSION

E-publishing is cheaper than standard paper publishing. Electronic publishing is ideal for publishing data or information that has a limited period in which it can be put to use, which must be updated frequently. It offers the right tool for the Indian journals to reach to a wider audience increase the visibility. Software also available for digitization/electronic publishing, which are very useful for capturing, storing, indexing, preserving and distributing. E-publishing helps library in its many ways and focus onwards, so the scientists and researchers/ users can get more benefits from this and they can easily access of electronic form.

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# ICT and Academic Libraries

Simardeep Kaur\*

## ABSTRACT

Information and Communication Technology (ICT) has become, within a very short time, one of the basic building blocks of modern society. ICT have transformed Library and Information services globally. Internet has provided universal access to information. Technological innovation has dramatically increased the rate of conversation of Knowledge, information and data into electronic format. Every sphere of the academic libraries are being affected by Information Communication Technology quite radically in India. ICT has transformed the way Knowledge is organized, stored accessed and retrieved.

## ICT

Information and Communication Technology (ICT) is an Umbrella term that includes all technologies for the manipulation and communication of information. The term is sometimes used in preference to Information Technology (IT) particularly in 2 communities: educational and government. ICT in fact encompasses any medium to record information i.e. magnetic disk/tape, optical disks (CD/DVD), flash memory etc, paper records, technology for broadcasting information – radio, television, technology for communicating through voice and sound or images- microphone, camera, loudspeaker, telephone to cellular phones. It includes the wide variety of computing hardware- PCs, servers mainframes, networked storage, internet and much more.

Many countries now understanding the basic skills and concepts of it and their importance. In every field, today's success depend on the Technology.

## ACADEMIC LIBRARIES

The libraries of today are dynamic social agencies for effective and efficient dissemination of information, knowledge and ideas. An academic institution and special library provides the life-blood to Government departments as well as industrial organizations. This can be achieved though effective network of libraries. Academic Libraries are greatly challenged in satisfying their customer needs since their target market researchers, lecturers, undergraduate and post graduate students is highly demanding and dynamic in nature.

Academic Library was a rigidly centralized institution, which was responsible for collecting, preserving and providing access to information and mainly oriented to expanding its collections. From a marketing communications perspective, the challenge to most Libraries is to attract users to the Library and to retain them. Communication and interaction are generally an important component of the process of relationship building.

## THERE ARE 3 TYPES OF ACADEMIC LIBRARIES

1. School Libray

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2. College Library
3. University Library

## **School Library**

### **College Library**

A college library is an integral part of the college. It plays an important role in the educational process. The Library is the heart of the campus. A present college should have well planned, functional library so that the graduate, leaving institutions, may be able to meet the increasing demands of the individual intelligence and intellectual capabilities in the changing social, political and economic conditions in our country.

The vital role libraries play in higher education has been well recognized by our educationists, libraries, education commission and committees, planners and by all other concerned with the growth and development of higher education in the country.

### **University Library**

Poopla(2001) suggested that university library system must ensure a closer relationship with its clientele and even among the library clientele themselves. To achieve this goal, he explained that library personnel should provide specialized information services for which students and lecturers as well as others university community members should make contacts with the library.

University libraries and study center libraries have a prominent role to play in education. Membership of the university and study center libraries is open to all students of higher education. Documents in the library are made available for consultation in the library and on loan for home use.

Reference service is the personal service rendered by the library staff to the readers in their use of the library. It involves all those activities for establishing contact between the right book and the right reader at the right time. Thus these libraries are able to widen the frontiers of service to education institutions.

## **TELECOMMUNICATION AND ACADEMIC LIBRARIES**

Libraries as Institutions involved in the dissemination of information are deeply interested in the various infrastructure networks, that serve as major channels for the transformation of information, such as telephones and telephone lines, cellular networks, cable television and the internet. The internet and world wide web(WWW) have made it possible for university teachers, researchers and students to locate what they need without getting into the Library.

Like most service institutions, academic libraries need to engage in marketing their services and products (i.e. reference service, CAS, SDI, online queries etc.) Providing current awareness service to an ICT-driven target market requires dynamic, innovative, timely and adequate communication technologies. As increasing numbers of users access electronic resources through library web sites, instruction guides and person to person contact at the reference or issue desk are declining. The digital library evolving needs a philosophy that involves the proactive management of relationships with users through applicable technologies.

The world is fast becoming a global village and a necessary tool for this process is communication of which telecommunications is a key player. The quantum development in the telecommunications industry all over the world is extremely rapid as one innovation replaces another in a matter of weeks.

In traditional library system, limited knowledge on a particular topic through printed material only. But now with the use of ICT facilities, there is a variety of material on a particular topic using Internet from anywhere and any time.

Application of ICT also enriches the research activities. Researchers can get information about recent developments in different segments, collect a variety of information on a particular topic, and can generate innovative ideas and new findings.

## **IMPACT OF INFORMATION COMMUNICATION TECHNOLOGY ON ACADEMIC LIBRARIES**

ICT introduce new ways of information handling, it also brings about change in the very structure of information and its communication. ICT impacted on every sphere of academic library activity e.g. the form of the library, collection development strategies, library building and consortia. In academic libraries, ICTs present an opportunity to provide value-added information services and access to a wide variety of digital-based information resources to their clients. Further, libraries are also using modern ICTs to automate their core functions, implement efficient and effective library cooperation and resource sharing networks, implement management information systems, develop institutional repositories of digital local content, and digital libraries; and initiate ICT-based capacity building programmes for library staff and information literacy programmes for library users. However, for most libraries in India, use of ICTs is largely restricted to traditional library automation, i.e. replacing manual operations by computerised methods. LIS such as OPAC, User Services, Reference Service, Bibliographic Service, Current Awareness Service, Document Delivery, Inter-library loan, Audio-Visual Services and Customer Relations can be provided more efficiently and effectively by using ICT, as they offer convenience of time and place, cost effectiveness, faster and most up to date dissemination and end user's involvement in the LIS processes. Journals, books, dissertation & theses, course material and patents are some of important sources of information that are now available in electronic form. Electronic resources provide 24 hours any where flexibility and convenience of use by multiple users and full text searches and faster delivery. Libraries, therefore, provide free or controlled access to internet and email. The academic library finds itself in a time of tremendous challenge but it is also a time of boundless opportunity to use ICT creatively to enhance service delivery to the user. Internet is not only a medium for digital communication but also the world's largest repository of information.

From the library's point of view digital format offers convenience of storage and maintenance, cost advantage, ability to target global users, etc.

We will briefly discuss various some types of library materials such as journal, books, theses & dissertations, patents, course material etc.

### **E-Journals**

Libraries have been exploring easy to cope with the problems of ever increasing prices of the journals, space requirements and decreasing level of usage as the journals get older. Nevertheless, libraries are required to maintain back issues of the journals, usually in bound form. Electronic Journal helps the librarians in addressing these problems to a great extent without significantly affecting the service levels. Electronic Journals can be accessed via internet from any web enabled PC. Electronic journals also offer benefit of full text searching and downloading of articles.sss

### **E-Books**

E-Book has been described as a text analogous to a book that is in digital form to be displayed on a computer screen. E-books can be read just like a paper book, using dedicated E-Book reader

such as GemStar eBook or on a computer screen after downloading it. There are also some newer technologies developing such as electronic paper, which is much like paper, except that the text can be changed, and talking books in MP3 format. E-book offer advantages like portability, 24 hours access, text search, annotation, linking, and multimedia and self-publishing possibilities. Development of e-book is still in the infancy stage and issues like compatibility, e-book readers, availability and intellectual property rights are to be addressed before it can be implemented on large scale.

## Electronic Theses and Dissertations (ETD)

Dissertations and theses produced at universities are important sources of information and knowledge for further research. A large number of universities have converted their theses and dissertation collection into digital libraries and have made it available on Internet for global access. A number of universities have also implemented Electronic Theses and Dissertation programmes, where researchers submit theses in electronic format.

Many Libraries traditionally have been repositories of local information and heritage documents such as manuscripts, rare books, maps, photographs and paintings etc. Archives or record management is also part of LIS function, particularly in business and research organizations. In other cases such as university libraries, documents generated in-house such as dissertation and theses, research reports etc represent the intellectual strength of the institution. Libraries are developing digital repositories of such resources, and providing Internet or intranet access to these. Large public and academic libraries also provide up to date local information via internet. Digital libraries are a natural progression from electronic document sharing. The main benefit of digital library is the ability to provide 24-hour, remote access to high-demand or restricted materials for multiple concurrent users. Setting up a digital library can either be done using 'off-the-shelf' digital library products, document management products or library management products capable of digital library management; or in-house system development using open archives software.

## CONCLUSION

Impact of ICT on information services is characterized by changes in format, contents and methods of production & delivery of information products, emergence of Internet as largest repository of information and knowledge, changed role of LIS professional from intermediary to facilitator, new tools for dissemination of information, shift from physical to virtual service environment, and extinction of some conventional information services and emergence of new and innovative web based LIS. LIS such as OPAC, User Services, Reference Service, Bibliographic Service, Current Awareness Service, Document Delivery, Inter-library loan, Audio-Visual Services and Customer Relations can be provided more efficiently and effectively by using ICT, as they offer convenience of time and place, cost effectiveness, faster and most up to date dissemination and end user's involvement in the LIS processes.

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# Digital Libraries Development in the 21<sup>st</sup> Century with Reference to India

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## ABSTRACT

The field of digital libraries opened up a new frontier of applications of technology for information management. Digitization in Indian setup is a bigger challenge than it appears. It is formed on digital format and is accessible through internet is very formative. It not only preserves information for the coming generation but also increase the usage of documents/articles. Its services are available round the clock without space/geographical restriction. Numerous users can use one document/article simultaneously around the world.

## INTRODUCTION

Everything changes with the passage of time. Therefore, use of method and system for getting and transmitting the information are also changing. There are huge resources of information (published and unpublished) which are available in the various countries of the world. Here, digital library plays an important role. The digital library contains all types of documents like primary, secondary, and tertiary in digital form. It allows flexible learning and distant education, accessing online available to the users readily. Digitized development of digital library is becoming more relevant and important in all fields.

Library profession is moving away from traditional library towards the creation and maintenance of a digital library. Information contents that were confined to traditional formats like books, journals, maps, sound recordings, etc. are getting increasingly available in diverse digital formats, being the core elements of digital collection, having emerged such as multimedia, hypertext, dynamic pages, interactive video, etc. Each format poses distinct challenges for its preservation and access. Capturing, storing, indexing preserving and re distribution content with ease of use and web-based user interface are some of the core challenges of any digital library that are being faced by the library professionals.

The concept of digital library is outcome of the popular use of information technology. The digital library can be called a 'well-free' electronic workstation to access universal knowledge irrespective of distant location of information. Digital library is a user-friendly interface and provides an institute means of presenting information, scanning the volumes inside the library itself and data getting from sources using at office and home. So searching into digital library is really searching into networking information system. The digital library is an informative transregional or even transmittal space for effectively keeping, disseminating information by means of the modern information technologies such as communication on the network data bank techniques. With the nature of digitization in collecting, operating by electronic computer transmission by the network, freely sharing resources and getting information.

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Rapid advances in information processing, storage and communication technologies have revolutionized the role of worldwide libraries in disseminating information services to their users. As a result libraries are facing new challenges, new competitors, new demands, new expectations and variety of information services from users tailored to their wants and needs. Information seekers are no longer satisfied with old printed material. The users' demands for information delivery in digital form to their desktop are increasing in recent times, in the present environment, where there is a wealth of information resources being published and transmitted through electronic media. Libraries must take protective measures to develop digital collections to cater for digital information needs of their users.

In libraries, the process of digitization began with the catalogue, moved to indexing and abstracting services, then to periodicals and large reference works, and finally to book publishing. Some of the largest digital libraries are purely digital having few, if any, physical holdings. The digital library basically stores information in electronic form and manipulates large collection of these materials effectively. Digitization refers to the process of translating a piece of intimation such as a book, sound recording, picture or video into Bits. Bits are the fundamental unit of information in computer system. Turning information into this binary digit is called digitization.

India is an ancient country which has about 20% of the total rare books and manuscripts of the world. According to an estimate, India still has more than 5 million manuscripts. These sources need an immediate digitization so that they are preserved for posterity.

The US Association of Research Libraries (ARL) has identified five elements common to all definitions of digital library as under:

1. The digital library is not a single entity.
2. The digital library requires technology to link the resources.
3. Linkage between digital libraries and information services are transparent to users.
4. Universal access to digital libraries must be a goal.
5. Digital library collections are not restricted to document surrogates but include digital artifacts that have no printed equivalent.

Digital conservation process includes the following:

- Document
- Data capture
- Data processing
- Storage
- Indexing and processing
- Retrieval and Display

## DEFINITIONS

According to **Akscyn and Witten** a digital library is defined as: "A collection of digital objects, including text, video and audio, along with methods for access and retrieval, and for selection, organization and maintenance of the collection".

Further, **Witten et al of Greenstone Digital Library Software System** stated that a:

"Well designed digital library software has the potential to enable non-specialists to conceive, assemble, build, publish and disseminate new information collections.

## DIGITIZATION/DATA CONSERVATION

Digitization refers to the conversion of an item-be it printed text of a book or journal article, manuscript, image or sound, film or video recording from one format into digital format. Data is

available in the form of textbook or reference materials, dissertations, theses, brochures, etc. These textual data need to be digitized with the use of various electronic operators like digital scanners, so that it could form part of digital library collection. This is really a complex task, which requires lot of expertise and knowledge in the area of information technology. It requires page-to-page conversation and digitization of the information into electronic format.

## PROCESS OF DIGITIZATION

There are four steps involved in the process of digitization:

- scanning
- indexing
- storage
- retrieval

## BUILDING DIGITAL LIBRARY

### Purpose

- To expedite the systematic development of procedures to collect, store and organize the information in digital form.
- To encourage cooperative efforts to save and share the investments in research sources, computing and communication network.
- To promote efficient delivery of information economically round the world.
- To strengthen the communication and collaboration between creator and user of the information.
- To provide the leadership for the successor for dissemination of knowledge in the area of research.
- To solve the space problem of the library, as the library is a growing organism.
- To preserve the library reading material for a longer duration.
- To solve the resource crunch in the library budget being spent for the purchase of books and journals.

## REQUIREMENTS FOR DIGITAL LIBRARY

To build the digital library, the library should have the following components:

- Electronic text
- Networking technology, and
- Users

### Electronic Text

In the era of Information Technology (IT), emergence of computers, advanced telecommunication systems, audio-visual technology, multimedia have created new possibilities to deal with the collection, organization and dissemination of vast amount of digital information. The computer and communication technology (CCT) have converted the world into an electronic media. With the decreasing budgetary provision of the libraries and increasing demands of users have changed the role of library. Thus, the libraries have to divert a part of their funds to build and access electronic resources in the form of OPAC, CD ROM, Online databases and other web resources. To convert the traditional library reading material into electronic/digital form, the library should have the following infrastructures:



- office
- latest model of computer
- hardware (server, storage device, scanner, CD, DVD, writer, camera, printer)
- software
- printed material to be digitized with proper licensing agreements

## Networking Technology

To access the digital data from the remote computer, library should have the following CCT:

- Latest model of computer
- Internet connection with high speed
- Telephone connection
- Latest model of modem
- Internet browser, and
- Search engine

## Users

Digital library is a costly project and therefore its security is must. The following protocols would be required for its use:

- request through information and library officer to get the digital document
- request through e-mail
- be the member of the digital library for direct access, and
- access through internet

## SELECTION OF DOCUMENTS AND COPYRIGHT ISSUES

Selection of documents and copyright issues are the basic steps to be followed in the planning stage. It should be decided that which document should be taken first. Before digitization begins, it is essential to determine copyright and other restrictions. Digital rights management (DRM) technology is a key enabler for the distribution of digital content. DRM refers to protecting copyright of electronic content by restricting the extent of usage an authorized recipient is allowed in regard to that content. DRM technology has historically been viewed as the methodology for the protection of digital media copyright.

## DIGITAL PRESERVATION (DP)

Digital preservation refers to the various methods of keeping digital material alive into the future. It includes everything from electronic publication on CD-ROM to online databases and the collection of experimental databases in digital format maintains the ability to display, retrieve and use digital collection in the face of rapidly changing technological and organizational infrastructure and elements.

The Wikipedia (2006) defines “DP as long term, error free storage of digital information, with means for retrieval and interpretation, for all the time span that the information is required for”, where “retrieval” means obtaining required digital files from the long-term, error free digital storage, without corrupting the error-free stored digital files; and “interpretation” means that retrieved digital files, which may be texts, charts, images or sounds are decoded and transformed into usable presentations for access to human.

## DIGITAL LIBRARY SOFTWARE PACKAGES

For the construction and administration of a digital library one needs digital library software. Many commercial digital library software packages are available today. Over the last couple of years, the Open Source Software (OSS) has grown tremendously in scope, popularity and use. OSS refers to the software which is freely available for use. Another important feature is access to its source code, which allows the participation of participants and users. A source code consists of a set of instructions which are translated into binary codes so that the computer can understand the instructions and allows the user to interact.

The website [www.opensource.org](http://www.opensource.org), while defining it states that, “open source promotes software reliability and quality by supporting independent peer review and rapid evaluation of source code. To be certified as open source, the license of a program must guarantee the right to read, redistribute, modify and use it freely”. The selected software packages are Greenstone, DSpace, Eprints and Fedora.

### Greenstone

Greenstone is a suite of software for building and distributing digital library collection. It is not a digital library but a tool for building digital libraries. It provides a new way of organizing information and publishing it on the Internet in the form of a fully-searchable, metadata driven digital library. It has been developed and distributed in August 2000 in cooperation with UNESCO and the Human Info NGO in Belgium and New Zealand Digital Library Projects, University of Waikate. It is open-source, multilingual software, issued under the terms of the GNU General Public License. Its developers received the 2004 IFIP Namur award for “contribution to the awareness of social implications of IT, and the need for a holistic approach for the use of IT that takes account of social implications.” Latest version of Greenstone is v2.71 and the purpose of this software is to empower users, particularly in universities, libraries and other institutions to build their own digital collections. The complete Greenstone interface and all documentation is available in five core languages: English, French, Spanish, Russian and Kazakh, interface can also be extended to other languages.

### DSpace

DSpace is popular software for developing digital libraries. It has been jointly developed by MIT (Massachusetts Institute of Technology) Libraries and Hewlett-Packard Lab. DSpace is very good system for capturing, storing, indexing, preservation and redistribution digital research material. DSpace is a digital asset management system. DSpace open source platform is freely available so that one can customize and extend it to adapt to various community needs.

### Eprints

Eprints is a tool that is used to manage the achieving of research in the form of books, posters or conference papers. Eprints is a free open source package that was developed at the University of Southampton in the UK.

## INDIAN SCENARIO

Digital libraries, like in other parts of the world, are fast emerging in India. India has the expertise to meet the challenge and to set up digital libraries in the country. We are at the threshold of breaking into cyber space and navigate through internet and World Wide Web (www). Through internet it has now become possible to be a part of “Global village” and exchange information instantly.

**10.1** Million Book Universal Digital Library Project

The Million Book Project initiated by Carnegie Mellon University, in some countries like China, India, Egypt etc. As on November 2005, around 170000 books in India have been scanned. In India 22 scanning centers are running at different places with 4 nodal centers at different places like Allahabad, Goa, Pune, New Delhi, Hyderabad etc.

**10.2** The digital library of ERNET, India hosted by Education and Research Network (ERNET). More than one million books are already digitized and available to access everyone over the Internet.

**10.3** Center for Development of Advance Computing (C-DAC) digital library project is known as specialized agency to digitize the rare manuscripts available in India and have been working on various projects.

### Some other initiatives in this context are

- Indian Institute of Science (NCSI) National Centre for Scientific information at IISc, Bangalore
- Digital Library of Library and Information Science (DLL) at DRTC, Bangalore
- Nalanda Digital Library Project
- National Institute of Technology (NIT), Calicut

Following are some of National digital library networks which are in implementation stage in the country:

- INFLIBNET (Information and Library Network)
- NICNET (National Information Centers Network)
- I-NET (Integrated Network)
- ERNET (Education and Research Network)
- SIRNET (Scientific and Industrial Research Network)
- CALIBNET (Calcutta Library Network)

### CONCLUSION

Digital library technology is becoming an essential enabler of library services. The digital library network within the users community saves a lot of access time and energy of both the users and the library or information personnel. Digitization involves huge money to create and maintain. There are many software packages available for digital libraries; among these Greenstone and DSpace are becoming more popular in India and abroad. Digital preservation refers to the various methods of keeping digital material alive into the future.

### DIGITAL LIBRARIES AND WEBSITES ON INTERNET

The following is a list of some important digital libraries from where information can be picked up for use

- ACM digital library [www.acm.org/dl/](http://www.acm.org/dl/)
- ALA (American library association) [www.benedict.com](http://www.benedict.com)
- Alexandria digital library [www.alexandria.sdc.ucsb.edu](http://www.alexandria.sdc.ucsb.edu)
- Berkeley digital library Sun SITE [www.sunsite.berkeley.edu](http://www.sunsite.berkeley.edu)
- California digital library [www.cdlib.org](http://www.cdlib.org)
- Columbia university digital library collections [www.cc.columbia.edu/cu/libraries/digital](http://www.cc.columbia.edu/cu/libraries/digital) .
- Digital library federation (DLF) [www.clir.org/diglib](http://www.clir.org/diglib)
- Digital library. net [www.digitallibrary.net](http://www.digitallibrary.net)

- IFLA digital libraries [www.ifla.org/II/diglib](http://www.ifla.org/II/diglib)
- Informedia digital video library [www.informedia.cs.cmu.edu](http://www.informedia.cs.cmu.edu)
- Internet public library [www.ipl.org](http://www.ipl.org)
- Library of congress [www.loc.gov](http://www.loc.gov)
- National digital library [www.memorv.loc.gov/ammem](http://www.memorv.loc.gov/ammem)
- WWW Virtual library [www.vli](http://www.vli)

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# Breast Milk : Best Health Option for Babies

Dr. Sarojini Jamadagni\*

## **Breast Milk is best. Nothing that money can buy is as good for a baby as breastfeeding**

**Breastfeeding** (or **nursing**) is the feeding of an **infant** or young **child** with **breast milk** directly from human **breasts** rather than from a **baby bottle** or other container. Babies have a **sucking reflex** that enables them to suck and swallow milk. Most mothers can breastfeed for six months or more, without the addition of **infant formula** or solid food.

Human **breast milk** is the most healthful form of milk for human babies. There are few **exceptions**, such as when the mother is taking certain **drugs** or is infected with **tuberculosis** or **HIV**. Breastfeeding promotes health, helps to prevent disease and reduces health care and feeding costs. In both **developing** and **developed countries**, artificial feeding is associated with more deaths from **diarrhoea** in infants.<sup>[4]</sup> Experts agree that breastfeeding is beneficial, but may disagree about the length of breastfeeding that is most beneficial, and about the risks of using artificial formulas.

Both the **World Health Organization** (WHO) and the **American Academy of Pediatrics** (AAP) recommend exclusive breastfeeding for the first six months of life and then breastfeeding up to two years or more (WHO) or at least one year of breastfeeding in total (AAP). Exclusive breastfeeding for the first six months of life "provides continuing protection against diarrhea and respiratory tract infection" that is more common in babies fed formula. The WHO and AAP both stress the value of breastfeeding for mothers and children. While recognizing the superiority of breastfeeding, regulating authorities also work to minimize the risks of artificial feeding.

According to a WHO 2001 report-alternatives to breastfeeding include:

- expressed breast milk from an infant's own **mother**
- breast milk from a healthy **wet-nurse** or a human-milk bank
- a **breast-milk substitute** fed with a cup, which is a safer method than a **feeding bottle and teat**.

The acceptability of **Breastfeeding in public** varies by culture and country. In **Western culture**, though most approve of breastfeeding, some mothers may be reluctant to do so out of fear of public opinion

## **BREASTFEEDING - THE FIRST 6 MONTHS OF LIFE**

Increasing optimal breastfeeding practices could save an estimated 1.5 million infant lives annually. Up to 55 percent of infant deaths from diarrheal disease and acute respiratory infections may result from inappropriate feeding practices. Optimal feeding for sustained child health and growth includes initiation of breastfeeding within the first hour of life, exclusive breastfeeding for six months, timely complementary feeding with appropriate foods, and continued breastfeeding for two years and beyond.

During the first 6 months of life, infants should be *exclusively* breastfed. This means that the healthy baby should receive breastmilk and *no other fluids*, such as water, teas, juice, cereal drinks, animal milk or formula. Exclusively breastfed babies are much less likely to get diarrhoea or to die from it than are babies who are not breastfed or are partially breastfed. Breastfeeding also protects against the risk of allergy early in life, aids in child spacing and provides protection against infections

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other than diarrhoea (e.g. pneumonia). Breastfeeding should be continued until at least 2 years of age. The best way to establish the practice is to put the baby to the breast immediately after birth and not to give any other fluids.

Advantages and Benefits of breastfeeding are listed below. Some or all of them may be explained to mothers using simple language.

If breastfeeding is not possible, cow's milk or milk formula should be given from a cup. This is possible even with very young infants. Feeding bottles and teats should *never* be used because they are very difficult to clean and easily carry the organisms that cause diarrhoea. Careful instructions should be given on the correct preparation of milk formula using water that has been boiled briefly before use.

## ADVANTAGES AND BENEFITS OF BREASTFEEDING

1. **Saves Lives.** Currently there are 9 million infant deaths a year. Breastfeeding saves an estimated 6 million additional deaths from infectious disease alone.
2. **Provides Initial Immunization.** Breastmilk, especially the first milk (colostrum), contains anti-bacterial and anti-viral agents that protect the infant against disease, especially diarrhoea. These are not present in animal milk or formula. Breastmilk also aids the development of the infant's own immune system.
3. **Prevents Diarrhoea / Diarrhea.** Diarrhoea is the leading cause of death among infants in developing countries. Infants under two months of age who are not breastfed are 25 times as likely to die of diarrhea than infants exclusively breastfed. Continued breastfeeding during diarrhea reduces dehydration, severity, duration, and negative nutritional consequences of diarrhea.
4. **Provides Complete and Perfect Nutrition.** Breastmilk is a perfect food that cannot be duplicated. It is more easily digested than any substitute, and it actually alters in composition to meet the changing nutritional needs of the growing infant. It provides *all* the nutrients and water needed by a healthy infant during the first 6 months of life. Formula or cow's milk may be too dilute (which reduces its nutritional value) or too concentrated (so that it does not provide enough water), and the proportions of different nutrients are not ideal.
5. **Maximizes a Child's Physical and Intellectual Potential.** Malnutrition among infants up to six months of age can be virtually eradicated by the practice of exclusive breastfeeding. For young children beyond six months, breastmilk serves as the nutritional foundation to promote continued healthful growth. Premature infants fed breastmilk show higher developmental scores as toddlers and higher IQs as children than those not fed breastmilk.
6. **Promotes the Recovery of the Sick Child.** Breastfeeding provides a nutritious, easily digestible food when a sick child loses appetite for other foods. When a child is ill or has diarrhea, breastfeeding helps prevent dehydration. Frequent breastfeeding also diminishes the risk of malnutrition and fosters catch-up growth following illness.
7. **Supports Food Security.** Breastmilk provides total food security for an infant's first six months. It maximizes food resources, both because it is naturally renewing, and because food that would otherwise be fed to an infant can be given to others. A mother's milk supply adjusts to demand; only extremely malnourished mothers have a reduced capacity to breastfeed.
8. **Bonds Mother and Child.** Breastfeeding immediately after delivery encourages the "bonding" of the mother to her infant, which has important emotional benefits for both and helps to secure the child's place within the family. Breastfeeding provides physiological and psychological benefits for both mother and child. It creates emotional bonds, and has been known to reduce rates of infant abandonment.

- 9. Helps Birth Spacing.** In developing countries, exclusive breastfeeding reduces total potential fertility as much as all other modern contraceptive methods combined. Mothers who breastfeed usually have a longer period of infertility after giving birth than do mothers who do not breastfeed.
- 10. Benefits Maternal Health.** Breastfeeding reduces the mother's risk of fatal postpartum hemorrhage, the risk of breast and ovarian cancer, and of anemia. By spacing births, breastfeeding allows the mother to recuperate before she conceives again.
- 11. Saves Money.** Breastfeeding is among the most cost-effective of child survival interventions. Households save money; and institutions economize by reducing the need for bottles and formulas. By shortening mothers' hospital stay, nations save foreign exchange. There are none of the expenses associated with feeding breastmilk substitutes (e.g. the costs of fuel, utensils, and special formulas, and of the mother's time in formula preparation).
- 12. Is Environment-friendly.** Breastfeeding does not waste scarce resources or create pollution. Breastmilk is a naturally-renewable resource that requires no packaging, shipping, or disposal.
- 13. Breastfeeding is Clean.** It does not require the use of bottles, nipples, water and formula which are easily contaminated with bacteria that can cause diarrhoea.
- 14. Milk intolerance is very rare** in infants who take only breastmilk.

### Breast milk

Not all the properties of **breast milk** are understood, but its **nutrient** content is relatively stable. Breast milk is made from nutrients in the mother's bloodstream and bodily stores. Because breastfeeding uses an average of 500 calories a day it helps the mother lose weight after giving birth. The composition of breast milk changes depending on how long the baby nurses at each session, as well as on the age of the child.

Research shows that the milk and energy content of breastmilk actually decreases after the first year. Breastmilk adapts to a toddler's developing system, providing exactly the right amount of nutrition at exactly the right time. In fact, research shows that between the ages of 12 and 24 months, 448 milliliters of human milk provide these percentages of the following minimum daily requirement

Energy:	29%
Folate:	76%%
Protein:	43%
Vitamin B12:	94%
Calcium:	36%
Vitamin C:	60%
Vitamin A:	75%

The quality of a mother's breast milk may be compromised by stress, bad food habits, chronic illnesses, smoking, and drinking.

### Infant weight gain

Breastfed infants generally gain weight according to the following guidelines:

- 0–4 months: 170 grams per week<sup>†</sup>
- 4–6 months: 113–142 grams per week
- 6–12 months: 57–113 grams per week

It is acceptable for some babies to gain 113–142 grams (4–5 ounces) per week. This average is taken from the lowest weight, not the birth weight.

The average breastfed baby doubles its birth weight in 5–6 months. By one year, a typical breastfed baby will weigh about 2½ times its birth weight. At one year, breastfed babies tend to be leaner than bottle fed babies. By two years, differences in weight gain and growth between breastfed and formula-fed babies are no longer evident.

## BENEFITS FOR MOTHERS

Breastfeeding is a cost effective way of feeding an infant, and provides the best nourishment for a child at a small nutrient cost to the mother. Frequent and exclusive breastfeeding can delay the return of fertility through **lactational amenorrhea**, though breastfeeding is an imperfect means of **birth control**. During breastfeeding beneficial **hormones** are released into the mother's body and the maternal bond can be strengthened. Breastfeeding is possible throughout **pregnancy**, but generally milk production will be reduced at some point.

## LONG-TERM HEALTH EFFECTS

A recent study indicates long duration of lactation (at least 24 months) is associated with a reduced risk of heart disease in women.<sup>1</sup> Breastfeeding mothers also have less risk of **endometrial** and **ovarian cancer** and **osteoporosis**,<sup>[17][19]</sup> and breast cancer.

Mothers who breastfeed longer than eight months also benefit from bone re-mineralisation and breastfeeding **diabetic** mothers require less insulin.<sup>1</sup> Breastfeeding helps stabilize maternal **endometriosis** reduces the risk of post-partum **bleeding** and benefits the **insulin** levels for mothers with **polycystic ovary syndrome**.

Women who breast feed for longer have less chance of getting rheumatoid arthritis, a Malmo University study published online ahead of print in the Annals of the Rheumatic Diseases suggested (See **Women Who Breast Feed for More than a Year Halve Their Risk of Rheumatoid Arthritis**). The study also found that taking oral contraceptives, which are suspected to protect against the disease because they contain hormones that are raised in pregnancy, did not have the same effect. Simply having children but not breast feeding also did not seem to be protective.

## BONDING

The hormones released during breastfeeding strengthen the **maternal bond**. Teaching partners how to manage common difficulties is associated with higher breastfeeding rates. Support for a mother while breastfeeding can assist in **familial bonds** and help build a **paternal bond** between father and child.

If the mother is away, an alternative caregiver may be able to feed the baby with expressed breast milk. The various **breast pumps** available for sale and rent help working mothers to feed their babies breast milk for as long as they want. To be successful, the mother must produce and store enough milk to feed the child for the time she is away, and the feeding caregiver must be comfortable in handling breast milk.

## Hormone release

Breastfeeding releases **oxytocin** and **prolactin**, hormones that relax the mother and make her feel more nurturing toward her baby. Breastfeeding soon after giving birth increases the mother's oxytocin levels, making her uterus contract more quickly and reducing bleeding. Oxytocin is similar to pitocin, a synthetic hormone used to make the uterus contract.



## Weight loss

As the fat accumulated during pregnancy is used to produce milk, extended breastfeeding—at least 6 months—can help mothers lose weight. However, weight loss is highly variable among lactating women, and diet and exercise are more reliable ways of losing weight.

## Natural postpartum infertility

A breastfeeding woman may not **ovulate**, or have regular periods, during the entire lactation period. The period in which ovulation is absent differs for each woman. This **Lactational amenorrhea** has been used as an imperfect form of natural contraception, with a greater than 98% effectiveness during the first six months after birth if specific nursing behaviors are followed. It is possible for some women to ovulate within two months after birth while fully breastfeeding.

## BREASTFEEDING DIFFICULTIES

While breastfeeding is a natural human activity, difficulties are not uncommon. Putting the baby to the breast as soon as possible after the birth helps to avoid many problems. The AAP breastfeeding policy says: *Delay weighing, measuring, bathing, needle-sticks, and eye prophylaxis until after the first feeding is completed.* Many breastfeeding difficulties can be resolved with proper hospital procedures, properly trained midwives, doctors and hospital staff, and lactation consultants—There are some situations in which breastfeeding may be harmful to the infant, including infection with **HIV** and acute poisoning by environmental contaminants such as lead.—Rarely, a mother may not be able to produce breastmilk because of a prolactin deficiency. This may be caused by Sheehan's syndrome, an uncommon result of a sudden drop in blood pressure during childbirth typically due to hemorrhaging. In developed countries, many working mothers do not breast feed their children due to work pressures. For example, a mother may need to schedule for frequent pumping breaks, and find a clean, private and quiet place at work for pumping. These inconveniences may cause mothers to give up on breast feeding and use infant formula instead.

## CONCLUSION

Both the **World Health Organization** (WHO) and the **American Academy of Pediatrics** (AAP) recommend exclusive breastfeeding for the first six months of life and then breastfeeding up to two years or more (WHO) or at least one year of breastfeeding in total (AAP). Exclusive breastfeeding for the first six months of life "provides continuing protection against diarrhea and respiratory tract infection" that is more common in babies fed formula. The WHO and AAP both stress the value of breastfeeding for mothers and children. While recognizing the superiority of breastfeeding, regulating authorities also work to minimize the risks of artificial feeding.

[the] vast majority of mothers can and should breastfeed, just as vast majority of infants can and should be breastfed. Only under exceptional circumstances can a mother's milk be considered as unsuitable for her infant. For those few health situations where infants cannot, or should not, be breastfed, the choice of the best alternative - expressed milk from the infant's own mother, breast milk from a healthy wet-nurse or a human-milk bank, or a breast milk substitute fed with a cup, which is a safer method than a feeding bottle or a teat - depends on individual circumstances.

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# A Study on Total Quality Management of Colleges of Education in Karnataka

Dr. Divakara Naik K S.\*

## ABSTRACT

The indomitable spirit of higher education paves the way for the growth of a nation in the political, economic, social, intellectual and spiritual dimensions. Teacher education is one of the areas in higher education which trains student-teachers in pedagogy, which in turn helps them to train the young minds of educational institutions. The "Fate of the nation is decided in the classroom," is a remark made by the Education Commission of India. Such classrooms are created by committed and dedicated teachers. These teachers are trained in teacher education institutions. Teacher education institutions should maintain quality to ensure the academic excellence of trainees who come into the teaching profession. Quality is a comparative standard prescribed for those institutions that are on the quest for output brilliance. Quality assurance in teacher education reflects on the high profile of the institution and the competency of student-teachers.

The purpose of this study was to explore the existing quality management practices at colleges of education in Karnataka. The exploratory technique under the survey method of research design was used for the study. A tool was constructed seven different rating scales, standardized and used for data collection. Quantitative and qualitative analyses were made for finding and interpreting results. The findings focus on the strong and weak areas of various colleges of education according to the quality indicators. The study recommends further strengthening of quality indicators, which are already strong, and the revamping of weaker quality indicators. It is also recommended that institutions should adhere to the quality standards set by national assessment and accreditation bodies NAAC&NCTE.

**Keywords:** TQM: Total quality management, Teacher education.

## INTRODUCTION

Quality has been an important aspect of any Industry be it service industry or a manufacturing industry. The word quality denotes investigation for the better. To determine success and failure in every aspect investigation is necessary. Quality is a very relative term. Quality in education is a matter of great quest and concern for institutions. According to Yeo (2009) 'Quality' means "To meet or exceed the expectations of customers". According to Idrus (1996), "what quality has done basically is shifted the way organizations and their people think about themselves and about all the things that impact on them". Quality in higher education is a multidimensional concept which includes all related function and activities that form part of academic life in a University system.

A colleges of teacher education institution fall within the purview of the service sector. Teacher education institutions need to define and determine the quality of service it provides. The origin of Total Quality Management began in the Japanese industry in the 1950's and became steadily more

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popular in the West since the early 1980's. Total Quality is a description of the culture, attitude and organization of a company that aims to provide, and continues to provide, its customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with things being done right the first time, every time and defects and waste eradicated from operations. Total Quality Management aims to transform the organization through progressive changes in attitudes, practices, structures and systems. Of the many approaches to Quality, TQM is the most reliable and unique method to track the progress and assure of quality. TQM has been tried in many educational institutions with impressive results. TQM is an integrated organizational effort designed to improve quality at every level. The philosophy of TQM has impacts not only on the organization but also one's life. TQM is about meeting quality expectations as defined by the customer which is also called as customer-defined quality. TQM offers a vehicle for schools and colleges to manage themselves effectively in a time of rapid change and retain a clear focus on the essential and dominant purpose of education (Rao, 2003). According to Isani and Vir, (2005) quality should be assessed by taking into consideration the quality of students, teachers, infrastructure student support services, curricula assessment and resources. According to Mukhopadhyay (2005) the most sensitive creators on earth are human beings and therefore to judge quality in education is a enormous challenge.

## **OBJECTIVES OF THE STUDY**

- To study the total quality management (TQM) of colleges of education in Karnataka.
- To study the functioning of total quality management (TQM) of colleges of education.

## **HYPOTHITHES OF THE STUDY**

- There is no significant difference among the institutional information about total quality management of colleges of education in Karnataka.
- There is no significant difference among the functioning of total quality management of colleges of education.

## **METHODOLOGY OF THE STUDY**

For present study, survey and comparative method was used as research method for collecting information.

## **SAMPLE**

In the present study, the sample was selected from all the 49 assessed and accredited colleges of teacher education in Karnataka state. For this purpose the 19 colleges of education were selected randomly from four divisions of Karnataka. All the selected colleges were recognized by NAAC and NCTE bodies.

## **TOOLS USED TO COLLECT DATA**

Seven different scales were developed by the investigator on various dimensions of quality education of colleges of education. Validity and reliability were established for all the seven scales. The Rating scales were developed to measure the quality management in colleges of education. The Rating scales were framed on the basis of objectives of the study they are:

1. **Curricular Aspects.**
2. **Teaching-Learning & Evaluation.**
3. **Research, Consultancy & Extension.**
4. **Infrastructure & Learning Resources.**
5. **Student-Support & Progression.**
6. **Governance & Leadership and Innovative Practice.**
7. **Internal Quality Assurance Cell (IQAC).**

## STATISTICAL TECHNIQUES USED

The appropriate statistical tools have been used such as simple mean, standard deviation, median, Inter quartile range (IQR), Non-parametric Kruskal Wallis analysis of variance and the Karl Pearson's correlation coefficient and other relevant statistical tests.

## ANALYSIS AND INTERPRETATION

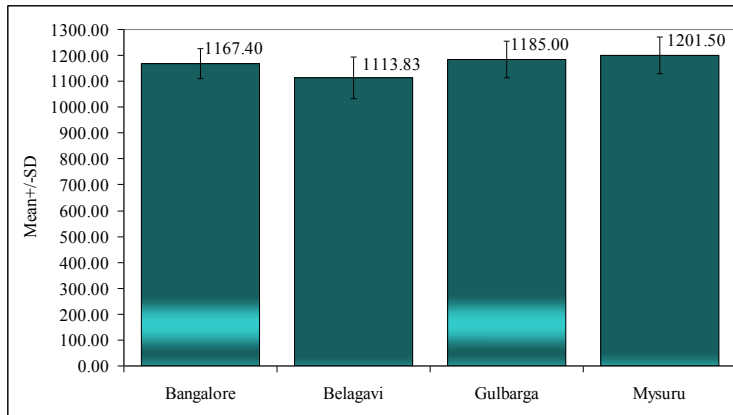
**HYPOTHESIS:01: There is no significant difference among the institutional information about total quality management of colleges of education in Karnataka.**

To test the above null hypothesis, the non-parametric Kruskal Wallis ANOVA test was performed and the results are presented in table given below

**Table: Results of Kruskal Wallis ANOVA with respect to institutional information scores about total quality management of colleges of education in Karnataka**

Divisions	Mean	SD	Median	IQR
Bangalore	1167.40	58.12	1178.00	25.00
Belagavi	1113.83	80.63	1099.50	48.50
Gulbarga	1185.00	70.71	1185.00	50.00
Mysuru	1201.50	71.09	1206.00	43.00
Total	1163.11	74.82	1178.00	63.25
H-value	3.7850			
P-value	0.2860			

The results of the above table reveal that, the mean $\pm$ SD and median  $\pm$  IQR of institutional information scores about total quality management of colleges of education in Karnataka are 1163.11 $\pm$ 74.82 and 1178.00 $\pm$ 63.25 respectively. In which, the mean of institutional information scores about total quality management is higher in Mysuru division (1201.50 $\pm$ 71.09) as compared to lowest in Belagavi division (1113.83 $\pm$ 80.63) followed by Bangalore division (1167.40 $\pm$ 58.12) and Gulbarga division (1185.00 $\pm$ 70.71). The difference between four divisions is not found to be statistically significant (H=3.7850, p>0.05) at 5% level of significance. Therefore, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the mean of institutional information scores about total quality management is similar in four divisions. The mean and SD scores are also presented in the following figure.



**Figure: Comparison of four regions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to institutional information scores about total quality management of colleges of education in Karnataka**

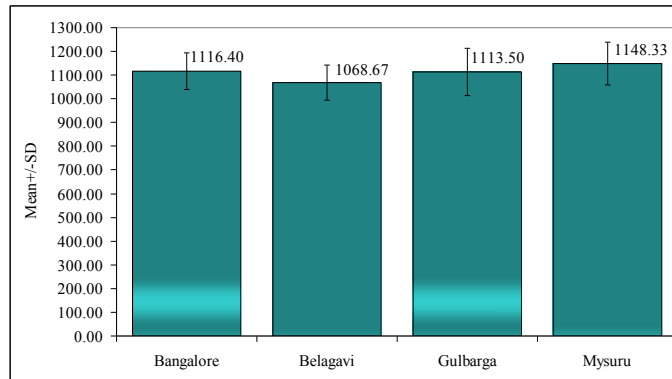
**HYPOTHESIS:02: There is no significant difference among the functioning of total quality management of colleges of education.**

To test the above null hypothesis, the non-parametric Kruskal Wallis ANOVA test was performed and the results are presented in table given below

**Table: Results of Kruskal Wallis ANOVA between four regions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to functioning scores about total quality management of colleges of education in Karnataka**

Divisions	Mean	SD	Median	IQR
Bangalore	1116.40	78.57	1112.00	52.50
Belagavi	1068.67	73.60	1060.00	45.50
Gulbarga	1113.50	99.70	1113.50	70.50
Mysuru	1148.33	89.29	1173.00	65.50
Total	1111.11	81.94	1112.00	65.75
H-value	2.6320			
P-value	0.4520			

The results of the above table reveal that, the mean±SD and median ± IQR of functioning scores about total quality management of colleges of education in Karnataka are 1111.11±81.94 and 1112.00±65.75 respectively. In which, the mean of functioning scores about total quality management is higher in Mysuru division (1148.33±89.29) as compared to lowest in Belagavi division (1068.67±73.60) followed by Bangalore division (1116.40±78.57) and Gulbarga division (1113.50±99.70). The difference between four divisions is not found to be statistically significant (H=2.6320, p>0.05) at 5% level of significance. Therefore, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the mean of functioning scores about total quality management is similar in four divisions. The mean and SD scores are also presented in the following figure.



**Figure: Comparison of four regions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to functioning scores about total quality management of colleges of education in Karnataka**

## Findings

- Mysuru division is kept better information than the other three divisions in order of priority Gulbarga, Bangalore and Belagavi respectively with respect to institutional information of total quality management of colleges of education.
- Mysuru division is better functioning than the other three divisions in order of priority Gulbarga, Bangalore and Belagavi respectively with respect to functioning of the institutional of total quality management of colleges of education.

## EDUCATIONAL IMPLICATIONS

- TQM will support educational institutions to create an upgraded service to its customers namely the students and employers.
- The consistent improvement focus of TQM is an essential component for satisfying the accountability essential to educational reform.
- TQM system offers more exciting challenge to students and teachers to empower teamwork and cooperation with one another. In that way, each observation can be utilized to help each other for better advancement.
- Human Resource Management (HRM) includes perception of the individuals (students and teachers) towards admission of students in a college, selection and appointment of teachers, development of students and the staff, and also efforts made by the institution to motivate them in their academic responsibilities and evaluate their work and recognize it.
- Operating procedure involves the perception of the individual about the organization in bringing efforts about qualitative improvement through various rules and regulations in the academic and administrative functioning.
- TQM requires a change in culture of teaching institutions. This is notoriously difficult to bring about takes time to implement. It requires changes of attitudes and working methods.

## CONCLUSION

It has been observed that quantitative expansion has been accompanied by qualitative deterioration in the teacher education institute. Thus, it can be said that TQM is very important in teacher training

colleges for improvement and showing excellence in all the areas of institution. By providing high quality educational services, educational institution plays an important role in the development of the national economy, of the society as a whole and of its individual members. Quality should be maintained not by teacher only but also by nonteaching staff in the teacher education institute.

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# A Study of Self - Concept of Intermediate Students

Dr. Cherukuri Narayanamma\*

## ABSTRACT

The present research work was undertaken to study the Self - Concept of Intermediate students. The study was conducted on a sample of Intermediate students of Guntur and Krishna Districts including urban and rural areas in Andhra Pradesh. Mohsin Self - Concept inventory developed by Dr. S.M. Mohsin (1979) was used. The findings of the study were most of the sample has moderate level of Self - Concept. The Self-Concept of female Intermediate College Students is found to be more than the Self - Concept of male Intermediate college students.

**Keywords:** Self – Concept, Intermediate Students

## INTRODUCTION

Many of the conditions that are responsible for moulding the personality pattern are not within the students control since they are a product of the environment in which the student lives and thus will continue to effect the self-concept, the core of the personality pattern as long as the environments, as happens when they go away to school or college or to a new place to live or work, environmental changes may bring about personality changes. Students who go away to college, for example, usually show greater social and emotional maturity and greater tolerance, than those who remain under the parental roof. On the other hand even in different environment students tend to seek people who treat them in a manner congruent with their self – concepts and avoid those who do not. This reinforces their already - established self – concepts and their characteristic patterns of adjustment to life.

During adolescent period there are lot of changes in all the domains of development like Physical, mental, emotional, moral, social, etc., The rapid changes in all these developments occur after 15 years or after they enter into intermediate level. The intermediate level or +2 level is most significant stage in human life. It is the period of unrest in the individual. He is exposed to lot of experiences that need his individual thinking and selection. In this period his self-concept is generally shaped. He also shows a significant level of insecurity and needs lot of guidance.

As each one develops a sense of selfhood, he becomes an increasingly important force in directing his own behavior. Although the individuals growth is shaped in different ways in different socio cultural settings, there are certain characteristic trends in development that are seen in society, primitive or advanced. According to Sullivan, ones personality development proceeds through various stages involving different patterns of interpersonal relationships. This leads to the development of self-concept. This self-concept develops confidence to lead successful life. As we know, today's students are tomorrow's citizens; we have to see that they develop good and rich self-concept in them. If they have the feeling of security, self-acceptance and self-respect only then they can lead peaceful and successful life. In the emerging society students face more tense situations especially the intermediate students. Intermediate is the bridge course between school study and professional study. If a student is not confident about oneself that develops in him/her the feeling of insecurity. If this feeling is frequent, it may lead to maladjustments. So the kind of self – concept one develops in the crucial stages of development is more important for the students.

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Once the self-concept develops the individual comes to perceive himself as an active agent in determining his own behavior. An individual is said to have a good self-concept if he is popular and influential. As the self-concept of an individual becomes congruent with his experience, he achieves integration and wholeness and the blocks to growth are removed.

## REVIEW OF RELATED STUDIES

**Ramesh, R. and Dr. A.Ponnambala Thiagarajan** (2005) carried out a study on the self-concept of B.Ed trainees. The sample consisted of 96 trainees of B.Ed college. The Multidimensional personality inventory designed by Manju Rani Agarwal was used as tool for this study. The findings were (i) Higher the qualification, higher was the Self-concept among the B.Ed students (ii) There is no significant difference in terms of their sex, community and locality and optional studies.

**Sahaya Mary, R. and Rev. Fr. J. Paul** (2005) study showed that self-concept of integrated course students in Pondichery- a study. The sample consists of 170 students. The tools used for this study is Self-concept inventory by Dr. Raj Kumar Saraswat (1984). The findings were (i) The students Self-concept is above average. (ii) Boys and girls do not differ significantly in their Self-concept. (iii) Students from large and small families do not differ significantly in their Self-concept. (iv) There is a significant difference among the students depending upon their parents.

## OBJECTIVES OF THE PRESENT STUDY

- To study the levels of self-concept of intermediate students
- To study the effect of the self-concept of intermediate students on the following variables  
(a) gender, (b) medium of instruction,, (c) type of management,

## TOOLS USED

For the purpose of the present study the researcher has adopted the following two tools.

**Mohsin Self-Concept Inventory (M S C I) by Dr. S.M. Mohsin (1979)**, Professor Emeritus, Department of psychology, Patna University, Patna.

## HYPOTHESES

1. Intermediate students does not differ in their levels of self-concept.
2. There is no significant difference in the self-concept of intermediate students with to gender, medium of instruction, type of management

## LIMITATIONS OF THE STUDY

1. The study is limited to intermediate students only.
2. The study is limited to intermediate colleges of rural and urban areas of Guntur and Krishna districts only.
3. Gender : Male/Female
4. Medium of instruction : Telugu/English
5. Type of Management : Govt/Private-aided/unaided

## SAMPLE

A sample is a small proportion of the population that is selected for observation and analysis. It is a collection consisting of a part or subset of the objects or individuals of population which is

selected for the express purpose of representing the population. By observing the characteristics of the sample, one can make certain inferences about the characteristics of the population from which it is drawn.

## Statistical Techniques Used

Mean, Standard deviation, Percentages, Critical ratio, One-way-Anova, Fisher's Z function

## Analysis and Interpretation of Data

**Hypothesis: 1.** Intermediate students do not differ in their levels of self-concept.

**Table-1: Showing the Classification of the total Sample on Self-Concept.**

S. No.	Score Range	N	%	Category
1.	Below 21.15	152	12.78	Low
2.	Between 21.15 and 30.11	850	71.48	Moderate
3.	Above 30	187	15.72	High

From above table, it can be seen that nearly 12.78 % of the sample have low self-concept. 71.48 % of the sample has moderate self-concept and remaining 15.72% of the sample has high self-concept. It shows that intermediate students differ in their levels of self-concept.

**Hypothesis: 2** Gender of intermediate students does not make significant influence in their self-concept.

To test this hypothesis, the following procedure is adopted. Mean and SDs for the two subgroups (male and female) have been computed considering the scores on tool which measured self-concept. From these the standard error of difference between the means was computed and 't' value is calculated.

**Table-2: Self-Concept – Gender - N, M, S.D. and 't' Value.**

Area	Sex	N	Mean	Std. Dev.	t-value	df
Self Concept	Male	626	25.29	4.67	2.81**	1187
	Female	563	26.02	4.23		

\*\*Significant at 0.01 level

In above table, the mean scores of female students of intermediate with respect to 'self-concept' (26.02) is significantly higher than the male intermediate students (25.29) as the obtained 't' value 2.81 is significant at 0.01 level for the given degrees of freedom. This shows that there is a significant difference in self-concept between male and female intermediate students. Hence, the null hypothesis "Gender of intermediate students does not make significant influence in their self-concept." is rejected.

**Hypothesis-3:** Medium of instruction of intermediate students does not make significant influence in their self-concept.

To test this hypothesis, the following procedure is adopted. Mean and SDs for the two sub groups (Telugu and English medium) have been computed considering the scores on tool which measured self-concept. From these the standard error of difference between the means was computed and 't' value is calculated.

**Table-3: Self Concept – Medium of Instruction - N, M, S.D. and 't' Value.**

Area	Medium	N	Mean	Std. Dev.	t-value	df
Self Concept	Telugu	924	26.16	4.30	7.76**	1187
	English	265	23.80	4.64		

\*\*Significant at 0.01 level

From above table, it can be seen that the mean opinion scores of Telugu medium intermediate students with respect to 'self - concept' (26.16) is significantly higher than the English medium intermediate students (23.80) as the obtained 't' value 7.76 is significant at 0.01 level for the given degrees of freedom. This shows that there is a significant difference in self-concept between Telugu and English medium intermediate students. Hence, the null hypothesis "Medium of instruction of intermediate students does not make significant influence in their self-concept" is rejected.

**Hypothesis- 4:** Type of management of Intermediate students does not make significant influence in their self-concept.

To test this hypothesis, the following procedure is adopted. Mean for the three groups have been computed considering the scores on tool which measured self-concept.

**Table-4: Self Concept – Type of Management - Analysis of Variance (ANOVA)**

Area	Management	N	Mean	Groups	Sum of Squares	df	Mean Square	F-value
Self Concept	Government	311	26.96	Between Groups	1104.11	2	552.05	28.75**
	Private Aided	513	25.71	Within Groups	22775.47	1186	19.20	
	Private Unaided	365	24.40	Total	23879.58	1188		

\*\*Significant at 0.01 level

From above table, it can be seen that the details of the ANOVA results on the perceptions of intermediate students with respect to 'self-concept' basing on their college management, between groups and within groups, the df values are 2 and 1186 respectively and sum of squares are 1104.11 and 22775.47 and mean squares are 552.05 and 19.20 respectively. The F-ratio is found to be 28.75 and the p-value is 0.00, which is significant at 0.01 levels. Hence, the null hypothesis "Type of management of Intermediate students does not make significant influence in their self-concept" is rejected.

## FINDINGS OF THE STUDY

1. The study shows that 12.78% of the total sample of intermediate college students has low self-concept. 71.48% of the sample has moderate self-concept and remaining 15.72% of the samples have high self-concept.
2. The self-concept of female intermediate college students is found to be more than the self-concept of male intermediate college students.
3. The self-concept of Telugu medium intermediate college students is found to be more than the self-concept of English medium intermediate college students.
4. The self-concept of government college intermediate college students is found to be more than the self-concept of private aided intermediate college students.
5. The self-concept of government college intermediate college students is found to be more than the self-concept of private unaided intermediate college students.
6. The self-concept of private aided intermediate college students is found to be more than the self-concept of private unaided intermediate college students.
7. The self-concept of government intermediate college students is found to be more than the self-concept of private intermediate college students.

## SUGGESTIONS FOR FURTHER RESEARCH

1. Future studies may focus on identifying the personality variables that help in the development of self-concept and intermediate students.
2. The awareness of the level of self concept of students in different streams like medical education, engineering education, legal education humanities, fine arts etc may be taken up.

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# Functions of Rhythm in English Poetry

Sirisha Domathoti\*

## INTRODUCTION

We encounter Rhythm in our daily lives by the movements of our own body like breathing, walking, talking etc. These are all rhythmic activities.

“Rhythm is patterning of energy simultaneously produced and perceived; a series of alternations of build-up and release, movement and encounter- Movement tending toward regularity but complicated by constant variations and local inflections”.

Rhythm makes a physical medium seem to move with deliberateness through time, recalling what has happened and projecting itself into the future rather than leasing time pass. Rhythm is felt as much it is heard or seen. A poetic rhythm is a heightening and an utilization of the rhythm of a particular language. The rhythm of the English language is about syllables and stresses.

The definition of rhythm is learning to read poetry in such a way as to experience its rhythm.

**Verse:** verse is a line or a stanza. Poetry is written in verse, verse introduces some principles. This book concerns poetry in verse.

Two major types of verse:

- Metrical verse
- Non metrical/free verse.

**Free verse:** It has straight forward device to bring about focus on the movement of the language, the nonstop flow of prose language which has breaks resolute by syntax and sense and it is regularly indicated by a slight pause. Free verse has integrity and function of its own. Free verse depend on the intrinsic rhythmic characteristics of spoken English.

**Meter and metrical verse:** Meter is an organizing principle which turns to the general inclination toward regularity in rhythm into a firmly decorative regularity that can be counted and named. To make the lines metrical –the poet has to work with the arrangement of words, placing of syntactic boundaries, and his organizations of lines. If the sense seems to need a pause or quickening, we can provide metrical verse because it is built into words and it will continue to make itself felt. Versification is the art of writing in verse; metrics or more conventionally, prosody is the study of that art.

**Beat:** The basic characteristic of the rhythm is organized as a meter that is the beat, an explode of energy that is part of repeating and ordered pattern. An offbeat refers to the weaker pulses and it is a kind of beat, but it is clearly noticeable from a full beat by being less powerful because full beat is powerful.

## TYPES OF METER

In this book there is a basic distinction between stress-meter and syllable stress meter. And every metrical poem as falling into the group of either four- beat verse or non four beat verse. Four beat verse occurs in all types of meter, but non four beat verse occurs solely in syllable stress meter.

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## FUNCTIONS OF RHYTHM IN POETRY

The major functions of rhythm in poetry are

The poem in general:

- (a) **Heightened language:** A poem employs of rhythm is one significant mode in which its language is heightened, it seems by the use of rhythm the language becomes stronger and it seems like a special language challenging special attention. In poetry, language is rendered that refers a exacting state, but it has no particular order, this is used for a short period of time less a product of the movement than in other practical purposes. In free verse, this arises from the line that divides up the unremitting association of the language, and their relation to syntactic and semantic structures but this is used for prose not for poetry. In poetry metrical verse is important, in metrical verse; the meter itself acts as a incessant principle of organization, in its stricter forms it conveys the feelings that every syllable count. Rhythm in poetry can frequently labor successfully as an imitation of the spoken voice. The heightening of language produces firm impersonality; by this we require the friendly human feelings and atmosphere. Every individual has their own language to understand the poetry.
- (b) **Consistency and Unity:** A poem is usually practiced as a single unit; one motive for this is its rhythmic consistency. Metrical verse remains in the same meter and free verse same kind of line length. In achieving unity, rhythm works hand in hand with the other features of the poem like diction and imagery.
- (c) **Forward movement and final closure:** A poem is the sense that throughout its course it is moving ahead and its end it reaches a point of finality rather than abrupt end. Metrical verse contributes to this portion of poetry by providing long structures. The subsistence of metrical expectations produces sequences of tension and respite. Finally, phrasal movement is important in onward progress.
- (d) **Memorability:** Poetry lodges in the brain more easily than prose because of the heightened and intensified language. This is true when we use metrical verse, the physical hollow of the meter acts as a storehouse of the words. In poetry we have to use rhyming words, selected and chosen words not like general conversation. So it is easy to remember. Another result of the memorability of poetic language is that poems increase in depth we cannot forget the poem through our lives if we forget it will come to our life with greater intensity and affluence.
- (e) **Mimetic suggestiveness:** Rhythm is depending upon the topic; the choice of the poem suggests particular rhythmic qualities. A rapid rhythm can be appropriate for a quick-moving subject; a slow rhythm may suit a somber topic.
- (f) **Emotional suggestiveness:** The option of the particular rhythmic form can also involve a certain emotional colouring. Though the association of rhythmic qualities and emotional states it is a substance of cultural conditioning; it seems like there is a physiological connection as well and the emotions manifest themselves directly in the way of expending muscular energy. When we speak, we use the words related to our feelings –light and rapid, abrupt smooth. Rhythmic quality expresses our feelings.
- (g) **Literary associations:** The rhythm of one poem can allude the rhythm of others –whether for a specific poem or group of poems. Writers who chose the same meter that Shakespeare and Milton chose the readers will instinctively transmit their poetry to the works of the earlier writers. (Derek Attridge, 1995) (P-12 to 15).

## WITHIN THE POEM

- (a) **Emphasis:** Organized rhythm sets up hope, and any disappearance from the probable norm is potentially a moment of emphasis. The more strict the control of rhythm the more powerful the foregrounding which can be achieved when the rhythm of the language diverges from its expected course.
- (b) **Articulation:** A departure from a norm that has been set up can also make a shift of subject or tonality, as when a poem moves into a diverse meter and thus alters the focus and the feeling of a poem.
- (c) **Mimetic effects:** A frequent kind of observations on rhythm involves connecting a particular rhythmic order in a poem to a quality. It's simple to find one self inventing relations of this kind, so rigorous awareness to the reading practice itself, and assessment with other poems is necessary. Noticeable mimetic efforts regularly turn out to be only the result of a rhythmic emphasis on a particular word. Mimetic devices that really do reproduce movements or sounds are often comic, since they interrupt upon the more restrained working of poetic rhythm.
- (d) **Emotional effects:** More important than imitations of the world referred to by the words are the ways in which changes in the mental and emotional state of the imagined speaker of the words are recommended by the rhythm. Presently, as the whole poem is imbued with a certain poignant resonance by its rhythm, so parts of lines can use movement to develop feelings expressed in the words.
- (e) **Meaning in process:** Verse heightens the reader's sense of language affecting during time, the poet can propose meanings that are then adapted or contradicted a moment later even though the modification of interpretations as the reader improvement is something that happens in prose also. Poetry possesses a special power to present meaning as a frequently changing process, this element of poetic meaning is present in any poem.
- (f) **Connection and contrast:** The common unifying control of planned rhythm is possible for particular parts of a poem to be connected by rhythmic similarities. Sometimes the same rhythmic outline exultantly reverses the meaning. In commenting on a poem, those functions of rhythm are applicable to the point. ( Derek Attridge, 1995) (P-20).

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# A Study of Environmental Education Competencies of Teacher Trainees

Dr. Pakala Naga Suresh Kumar\* and Dr. T. Swaruapa Rani\*\*

## ABSTRACT

The present study aimed at to study the environmental education competencies of B.Ed. teacher trainees. The sample of the study constituted of 600 B.Ed. teacher trainees of Guntur and Chittoor district of Andhra Pradesh. The normative survey method had been used for the study. Environmental education competencies scale was constructed by the researcher. The findings of the study revealed that out of 600 teachers trainees 164 (27.33%) teacher trainees possessed low level of environmental education competencies, 288 (48.00%) teacher trainees possessed moderate level of environmental education competencies and 148 (24.67%) teacher trainees possessed high level of environmental education competencies. There is a significant difference between the environmental education competencies of male and female teacher trainees. There is no significant difference in the environmental education competencies of rural and urban area teacher trainees. There is no significant difference in the environmental education competencies of government and private college teacher trainees. There is no significant difference in the environmental education competencies of arts and science subject teacher trainees. There is no significant difference in the environmental education competencies of graduate and post graduate teacher trainees. There is no significant difference in the environmental education competencies of teacher trainees of literate and literate parents.

## INTRODUCTION

Environmental problems have attracted the attention of a wide cross-section of people all over the world during the last two decades. People are becoming increasingly conscious of a variety of problems like global warming, ozone layer depletion, acid rain, famines, droughts, floods, scarcity of fuel, firewood and fodder, pollution of air and water and problems from hazardous chemicals and radiation which have adverse effect on the environment. Because of ever deteriorating environment due to human activities, exhaustive and extensive study of the environment is needed, if man is to survive comfortably. This study is becoming more and more popular under the name environmental education or environmental studies. This is not a new subject but it is an extension of ecological approach regarding the study of environment in relation to human welfare. It was defined in the seminar on environmental education organized by the Finnish National Commission for UNESCO at Jammi in 1974 as; "Environmental education is a way of implementing the goal of environment protection. Environmental education is not a separate branch of science or subject of study. It should be carried out according to the principle of lifelong integral education". Teachers plays a key role in environmental education. He should impart environmental knowledge among

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school students as it increases environmental awareness and positive attitudes among the students. The teacher should be competent in applying the knowledge of ecological foundations to environmental issues and identify key principles involved. The teacher should develop same attitude and competencies in learners to take individuals or group decisions and actions". Thus the teacher has crucial and important role in accomplishing the educational objectives for the development and of society.

## NEED OF THE STUDY

Teacher plays a vital role in environment education, he/she acquired knowledge, competencies and pedagogical skills at the time of their training Programme. The initial steps in designing training programmes at either pre or in service levels must include a definition of the desired teacher product. The most functional way to define the product is in the form of expected behavioral competencies - associated knowledge, skills, and attitudes which are necessary in order to effectively teach environmental education programmes. The descriptions of environmental education competencies found herein have been selected on the basis of two criteria: (1) they represent unique applications of knowledge, attitudes, behavior and/or skills to environmental education (2) they are general education competencies pertinent to environmental education as well as other disciplines, but are not adequately developed by most existing teacher education programmes. Therefore, the competencies proposed here are in addition to the general knowledge, attitudes, and skills expected of an effective educator. Teacher training Programme adequately prepare teachers to effectively achieve the goals of environmental education, so the teacher trainees must improve their environmental competencies and skills while they are pursuing their training Programme. The well qualified teacher trainees must be capable of applying knowledge of ecological foundations to provide the alternative solutions to the environmental problems. They must be able to select and apply the curricular materials and strategies which develops the awareness among the students about environmental problems. Teacher trainee must be competent to research on environmental problems and to provide alternative solutions. Qualified and trained teachers are the strongest pillars of any educational system. In this context the teacher training institutions have prepared qualified and trained teachers by imparting required competencies and pedagogical skills among them. These competencies and skills are essential as they mould and shape teacher trainees for the challenging role that they have to play in the society. The teacher trainees also need to develop sound conceptual knowledge about the concepts of environment and ecosystem globalization, Pollution, ecosystem, industrialization, urbanization, environmental degradation and sustainable development. This conceptual knowledge further needs to be applied to make sound foundations of environmental education in finding solutions to the environmental problems that our society is facing today. In the current context of environmental problems and concerns, there is a need of the hour for present investigation "***A Study of Environmental Education Competencies of Teacher Trainees***"

## OBJECTIVES OF THE STUDY

1. To identify the levels of environmental education competencies of teacher trainees.
2. To find out the difference in the environmental education competencies of teacher trainees with respect to gender, locality, management, subject, qualification and parental education.

## HYPOTHESES OF THE STUDY

1. There is no significant difference in the environmental education competencies of male and female teacher trainees.

2. There is no significant difference in the environmental education competencies of rural and urban teacher trainees.
3. There is no significant difference in the environmental education competencies of government and private teacher trainees.
4. There is no significant difference in the environmental education competencies of arts and science teacher trainees.
6. There is no significant difference in the environmental education competencies of graduate and post graduate teacher trainees.
7. There is no significant difference in the environmental education competencies of teacher trainees of literate and illiterate parents.

## METHODOLOGY OF THE STUDY

The normative survey method was used for this study. The sample of the study constituted of 600 B.Ed. teacher trainees of Guntur and Chittoor district of Andhra Pradesh. The stratified random sampling technique was used in selecting the sample. The investigator constructed and validated the scale namely “Environmental education competencies Scale”. The scale comprises of 41 statements and each item provide five responses. The responses were expressed on a five–point scale, strongly agree, agree, undecided, disagree, strongly disagree and weights of 5,4,3,2,1 are favorable statements and the reverse in unfavorable statements. The reliability of the environmental education competencies scale was calculated as 0.78.

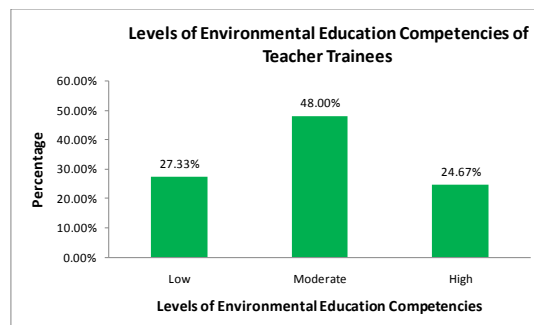
## STATISTICAL TECHNIQUES USED

For the analysis of the data Mean, S.D. and the ‘t’ test were used to in this study.

## Analysis and Interpretation of Data

**Table-1: Level of Environmental Education Competencies of Teacher Trainees**

S. No	Teacher Trainees		Level of Environmental Education Competencies
	No. of Students	Percentage %	
1.	164	27.33%	Low
2.	288	48.00%	Moderate
3.	148	24.67%	High



From the table 1, it was found that the number and percentage of teacher trainees falling under high, moderate and low level of environmental education competencies. It indicated that out of 600 teachers trainees 164 (27.33%) teacher trainees possessed low level of environmental education competencies, 288 (48.00%) teacher trainees possessed moderate level of environmental education competencies and 148 (24.67%) teacher trainees possessed high level of environmental education competencies. Thus the teacher trainees have different levels of environmental education competencies. It was observed that the more number of teacher trainees hold moderate level of environmental education competencies.

**Table-2: Comparison of Environmental Education Competencies of Male and Female Teacher Trainees**

Variable	Sample	Sample size (N)	Mean	S.D.	Cal. t- value
Gender	Male	300	163.26	11.73	2.33*
	Female	300	165.49	11.75	

\* Significant at 0.05 level

From the table -2, it is obvious that the calculated t – value (2.33) is greater than the table value 1.96 at 0.05 level of significance with regard to gender on environmental education competencies of teacher trainees. This indicates that there is a significant difference in the environmental education competencies of male and female teacher trainees. Hence the formulated hypothesis was rejected. It was observed that female teacher trainees had a high level of environmental education competencies than the male teacher trainees.

**Table-3: Comparison of Environmental Education Competencies of Rural and Urban Teacher Trainees**

Variable	Sample	Sample size (N)	Mean	S.D.	Cal. t- value
locality	Rural	300	163.59	12.07	1.63@
	Urban	300	165.16	11.45	

@ Not Significant at 0.05 level

From the table - 3, it is inferred that the calculated t – value (1.63) is less than the table value 1.96 at 0.05 level of significance with regard to locality on environmental education competencies of teacher trainees. This indicates that there is no significant difference in environmental education competencies of rural and urban teacher trainees. Hence the formulated hypothesis was accepted. The variable locality was not influenced on environmental education competencies of teacher trainees.

**Table-4: Comparison of Environmental Education Competencies of Government and Private Teacher Trainees**

Variable	Sample	Sample size (N)	Mean	S.D.	Cal. t- value
Management	Government	300	164.07	10.97	0.62@
	Private	300	164.67	12.56	

@ Not Significant at 0.05 level

From the table – 4, it is inferred that the calculated t – value (0.62) is less than the table value 1.96 at 0.05 level of significance with regard to management on environmental education competencies of teacher trainees. This indicates that there is no significant difference in the environmental education competencies of government and private teacher trainees. Hence the formulated hypothesis was accepted. The variable management was not influenced on environmental education competencies of teacher trainees.

**Table-5: Comparison of Environmental Education Competencies of Science and Arts Teacher Trainees**

Variable	Sample	Sample size (N)	Mean	S.D.	Cal. t- value
Subject	Science	314	164.31	12.18	0.12@
	Arts	286	164.43	11.43	

@ Not Significant at 0.05 level

From the table – 5, it is inferred that the calculated t –value (0.12) is less than the table value 1.96 at 0.05 level of significance with regard to subject on environmental education competencies of teacher trainees. This indicates that there is no significant difference in the environmental education competencies of science and arts subject teacher trainees. Hence the formulated hypothesis was accepted. The variable subject was not influenced on environmental education competencies of teacher trainees.

**Table-6: Comparison of Environmental Education Competencies of Graduate and Post Graduate Teacher Trainees**

Variable	Sample	Sample size (N)	Mean	S.D.	Cal.t- value
Qualification	Graduation	340	163.87	11.86	0.92@
	Post graduation	260	164.76	11.73	

@ Not Significant at 0.05 level

From the table – 6, it is inferred that the calculated t – value (0.92) is less than the table value 1.96 at 0.05 level of significance with regard to qualification on environmental education competencies of teacher trainees. This indicates that there is no significant difference in the environmental education competencies of graduate and post graduate teacher trainees. Hence the formulated hypothesis was accepted. The variable qualification was not influenced on environmental education competencies of teacher trainees.

**Table-7: Comparison of Environmental Education Competencies of Teacher Trainees of Literate and Illiterate parents**

Variable	Sample	Sample size (N)	Mean	S.D.	Cal.t- value
Educational status of parents	Literate	364	163.68	12.422	1.79@
	Illiterate	236	165.44	10.677	

@ Not Significant at 0.05 level

From the table – 7, it is inferred that the calculated  $t$  – value (1.79) is less than the table value 1.96 at 0.05 level of significance with regard to the educational status of parents on environmental education competencies of teacher trainees. This indicates that there is no significant difference in the environmental of competencies of teacher trainees of literate and illiterate parents. Hence the formulated hypothesis was accepted. The variable educational status of parents was not influenced on environmental education competencies of teacher trainees.

## MAJOR FINDINGS

1. out of 600 teachers trainees 164 (27.33%) teacher trainees possessed low level of environmental education competencies, 288 (48.00%) teacher trainees possessed moderate level of environmental education competencies and 148 (24.67%) teacher trainees possessed high level of environmental education competencies.
2. There is a significant difference between the environmental education competencies of male and female teacher trainees.
3. There is no significant difference between the environmental education competencies of rural and urban area teacher trainees.
4. There is no significant difference between the environmental education competencies of government and private college teacher trainees.
5. There is no significant difference between the environmental education competencies of arts and science subject teacher trainees.
6. There is no significant difference between the environmental education competencies of graduate and post graduate teacher trainees.
7. There is no significant difference between the environmental education competencies of teacher trainees of literate and literate parents.

## CONCLUSIONS

It was observed that the more number of teacher trainees hold moderate level of environmental education competencies. Female teacher trainees had high level of environmental education competencies than the male teacher trainees. The variables locality, management, subject, qualification and educational status of parents were not influenced on environmental education competencies of teacher trainees.

## EDUCATIONAL IMPLICATIONS OF THE STUDY

Environmental education is an important interdisciplinary subject, where the teacher plays a significant role. To do so, the teacher trainees need to develop the required environmental competencies and skills so that they can do justice to their profession and teach environmental education in an effective manner. Wise choices have to be made in selecting and implementing curricular material and strategies that will develop an awareness of environmental problems and their solutions among the students. Different methods of teaching like case studies, problem solving method, project based learning should well versed among the teacher trainees. The teacher trainees should be able to develop knowledge, values, attitudes as well as clear conceptual knowledge of the environment, which in turn should result in active participation in environmental protection activities. For being able to do so the teacher trainees need to take part in different types of activities like participation and organization of seminars and workshops which improve the awareness and knowledge on issues like pollution, global warming, ozone depletion etc. The teacher trainees

also needs to apply and correlate this knowledge with curricular and co-curricular activities in the school. The in turn will help the students become environmentally aware as well as motivate them in taking steps towards environmental protection.

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# Laws Safeguarding Women and Children Against Crimes in India

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The world we live in is characterized by violence against women and children, as they are the vulnerable section of the society. Instances of violence against women and children are observed in all places of their life starting from home to outside world. Violence against them manifest itself in various forms like wife battering, sexual assault and abuse from childhood to adulthood, female genital mutilation and rape, in war and peacetime, etc. Suffering from gender-based violence is the fate of millions of women and girls all over the world and these are adversely affecting their emotional development, creativity and productivity both in their homes, communities and places of work. The World March of Women (2000), also includes women who are more prone to violence, women who are displaced, migrants, refugees or those living under foreign occupation.

Women and children, particularly girls, are vulnerable to violence at all stages of life. They are threatened by female infanticide, incest, child prostitution, rape, partner violence, psychological abuse, sexual harassment and harmful traditional practices such as forced marriage, etc.

The World Health Organization (WHO) estimates that at least one in every five of the world's female population has been physically or sexually abused at some time of their life (Population Reference Bureau, 2001). Such violence arises from the patriarchal system which since time immemorial has exerted control over women's lives (World March of Women, 2000). However subtle the violence may be, it has no less devastating effect on the victim which mostly remains lifelong. Violence mostly affects the victim psychologically, cognitively and inter-personally. The different forms of violence that women and children undergo and the various laws that have been enacted in India till date to prevent and protect them from such violence are discussed below.

**Sexual violence:** or sexual abuse is a global phenomenon, which occurs throughout the world. Research reveals that "nearly one in four women experience sexual violence by an intimate partner, and up to one-third of adolescent girls report their first sexual experience as being forced". This shows that sexual abuse against women has been alarming. Physically it causes injuries, has an increased risk of a range of sexual and reproductive health problems. Its impact on mental health can be as serious as its physical impact, and may be equally long lasting. Victims of sexual violence may further succumb to mental trauma sometimes leading to suicide. Some victims suffer from various deadly like diseases HIV infection due to contamination. Sometimes victims die due to damages suffered either during a sexual assault or subsequently. Some victims are also killed/ murdered by the perpetrators to eliminate the witness and the evidences. Sexual violence can also profoundly affect the social well-being of victims; individuals may be stigmatized and ostracized by their families and others as a consequence.

**Sexual harassment:** is defined as unwelcome sexual advances, requests for sexual favours, and other verbal or physical conduct of a sexual nature when either:

- The conduct is made as a term or condition of an individual's employment, education, living environment or participation in a University community.
- The acceptance or refusal of such conduct is used as the basis or a factor in decisions affecting an individual's employment, education, living environment, or participation in a community.

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- The conduct unreasonably impacts an individual's employment or academic performance or creates an intimidating, hostile or offensive environment for that individual's employment, education, living environment, or participation in a community.

Sexual harassment is defined by law and includes requests for sexual favours, sexual advances or other sexual conducts when (1) submission is either explicitly or implicitly a condition affecting academic or employment decisions; (2) the behaviour is sufficiently severe or pervasive as to create an intimidating, hostile or repugnant environment; or (3) the behaviour persists despite objection by the person to whom the conduct is directed. Sexual harassment at workplace often take place creating a hostile situation for women everywhere in the world.

## HUMAN TRAFFICKING IN INDIA

Human trafficking is the third largest organized crime across the globe after drugs and the arms trade. According to the definition of the United Nations – “trafficking is any activity leading to recruitment, transportation, harbouring or receipt of persons, by means of threat or use of force or a position of vulnerability”. Close to 80% of the human trafficking across the world is done for sexual exploitation and the rest is for bonded labour. India is considered as the hub of this crime in Asia. As per the statistics of the government – in every eight minutes a child goes missing in our country. In 2011 about 35,000 children were reported missing and more than 11,000 out of these were from West Bengal. Further, it is assumed that only 30% of the total cases are reported, so the actual number is pretty high.

As has been stated earlier, human trafficking is one of the major problems in India. Till date no concrete study has been conducted so far to know the exact number of trafficked kids in India. *The New York Times* has reported on the widespread problem of human trafficking in India especially in the state of Jharkhand. Also in the report it is stated that young girls are trafficked from neighbouring Nepal to India. In another article published in *The Times of India* – Karnataka is the third state in India for human trafficking. Other South Indian states are also the most sought after destinations for human trafficking. Every year more than 300 such cases are reported in each of the four south Indian states. Whereas West Bengal and Bihar, on an average have 100 such cases each year. As per the data, more than half of the human trafficking cases are from these states. According to the latest report on human trafficking by the United Nations Office on Drugs and Crime reveals that Tamil Nadu has 528 such cases of human trafficking in 2012. The number is really high and more than any other state except for West Bengal (549). As per the data from Home Ministry, 1379 cases of human trafficking were reported from Karnataka in the period of four years, in Tamil Nadu the number is 2,244 whereas Andhra Pradesh has 2,157 cases of human trafficking. Recently 300 bonded labourers in Bangalore have been rescued. According to an article in *Firstpost*, Delhi is the hub of human trafficking and is the hotspot for illegal trade of young girls for domestic labour, forced marriage and prostitution. Delhi is also the transit point for human trafficking.

Kids especially girls and young women, mostly from the Northeast are taken from their homes and sold in faraway states of India for sexual exploitation and to work as bonded labour by the agents who lure their parents with education, better life, and money for these kids. Agents do not send these kids to school but sell them to work in brick kilns, carpentry units, as domestic servants, beggars, etc., whereas most of the girls are trafficked for the purpose of sexual exploitation. In certain regions, girls are forced to marry to one or many older people, where female to male sex ratio is highly disturbed. Children from tribal areas are at greater risk of human trafficking. Recently there were cases of human trafficking in which most of the children were from the Kuki tribe in Manipur's Tamenglong district. Reason for this was the tribal clashes that let the human

trafficking to prosper. Conflict between the Kukis and Nagas tribe in Northeast region between 1992 and 1997 left many kids homeless. These kids were taken by agents to the other parts of the country.

Thus we see that violence against women/children take place everywhere and at all levels, like the home or family level, the community level and the state level. However, to protect these children/women, Government of India has enacted many laws. Some of these laws which have been enacted over the years to provide protection to children/women against domestic violence, violence at workplace and violence at tender age are discussed below.

## The Protection of Children from Sexual Offences (POCSO) Act

- The Act on protection of children against Sexual Offences was passed on 22<sup>nd</sup> May, 2012 by the parliament. Protection of children by the state is guaranteed to Indian citizen by Article 21 of the Indian constitution, and also mandated given India's status as signatory to the UN Convention on the rights of the child. The POCSO Act, aims to protect children from offences of sexual assault, sexual harassment and pornography. It ensures that the child's interest is safeguarded in each stage of the judicial process and makes the legal procedure easy through child-friendly reporting, recording of evidence, investigation and speedy trial of offences through designated Special Courts.

The new Act deals with a number of offences under which an accused can be punished. In order to curb the rise in violence against children, amendments have been made in the Act by including death penalty for aggravated sexual assault on children, besides providing stringent punishments for other crimes against minors. For example the Act now provides for fines and imprisonment to curb child pornography.

The amendments in Section-2, 4, 5, 6, 9, 14, 15, 34, 42 and 45 of the POCSO Act, 2012 are being made to address the aspects of child sexual abuse in an appropriate manner.

**Table 1: Punishment for Offences for Using Child for Pornographic Purposes**

Offence	POCSO Act, 2012	2019 Bill
Use of child for pornographic purposes	<ul style="list-style-type: none"> <li>• Maximum: 5 years</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum: 5 years</li> </ul>
Use of child for pornographic purposes resulting in penetrative sexual assault	<ul style="list-style-type: none"> <li>• Minimum: 10 years</li> <li>• Maximum: life imprisonment</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum: 10 years (in case of child below 16 years: 20 years)</li> <li>• Maximum: life imprisonment</li> </ul>
Use of child for pornographic purposes resulting in aggravated penetrative sexual assault	<ul style="list-style-type: none"> <li>• Life imprisonment</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum: 20 years</li> <li>• Maximum: life imprisonment, or death.</li> </ul>
Use of child for pornographic purposes resulting in sexual assault	<ul style="list-style-type: none"> <li>• Minimum: Six years</li> <li>• Maximum: Eight years</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum: Three years</li> <li>• Maximum: Five years</li> </ul>
Use of child for pornographic purposes resulting in aggravated sexual assault	<ul style="list-style-type: none"> <li>• Minimum: Eight years</li> <li>• Maximum: 10 years</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum: Five years</li> <li>• Maximum: Seven years</li> </ul>

## **The Protection of Women from Domestic Violence Act 2005**

This is an Act of the Parliament in India to protect women from domestic violence. It was brought into force by the Indian government from 26 October, 2006. The Act provides for the first time in Indian law a definition of "domestic violence", which include not only physical violence, but also other forms of violence such as emotional/verbal, sexual, and economic abuse. It is a civil law meant primarily for protection orders and not meant to penalize criminally.

The Protection of Women from Domestic Violence Act, 2005 differs from the provision of the Penal Code - section 498A of the Indian Penal Code - in that it provides a broader definition of domestic violence.

Domestic violence is defined by Section 3 of the Act as any act, omission or commission or conduct of the respondent shall constitute domestic violence in case it:

1. harms or injures or endangers the health, safety, life, limb or well-being, whether mental or physical, of the aggrieved person or tends to do so and includes causing physical abuse, sexual abuse, verbal and emotional abuse and economic abuse; or
2. harasses, harms, injures or endangers the aggrieved person with a view to coerce her or any other person related to her to meet any unlawful demand for any dowry or other property or valuable security; or
3. has the effect of threatening the aggrieved person or any person related to her by any conduct mentioned in clause (a) or clause (b); or
4. Otherwise injures or causes harm, whether physical or mental, to the aggrieved person.

The Act defines four kinds of abuse namely: "physical abuse", "sexual abuse", "verbal and emotional abuse" and "economic abuse".

Primarily meant to provide protection to the wife or female live-in partner from domestic violence at the hands of the husband or male live-in partner or his relatives, the law also extends its protection to women living in a household such as sisters, widows or mothers. Domestic violence under the act includes actual abuse or the threat of abuse whether physical, sexual, verbal, emotional or economic. Harassment by way of unlawful dowry demands to the woman or her relatives would also be covered under this definition.

### **The salient features of the Protection from Domestic Violence Act, 2005 are as follows**

- The Act seeks to cover women who are or have been in a relationship with the abuser, have lived together in a shared household and are related by consanguinity, marriage or a relationship in the nature of marriage, or adoption; in addition relationship with family members living together as a joint family are also included. Even those women who are sisters, widows, mothers, single women, or living with the abuser are entitled to get legal protection under the proposed Act.
- "Domestic violence" includes actual abuse or the threat of abuse that is physical, sexual, verbal, emotional and economic. Dowry related harassment too is included.
- The Act recognizes the woman's right to secure housing and allows her to either reside in the matrimonial home or shared household. It doesn't matter whether or not she has any title or rights in the household. This right is secured by a residence order, which is passed by a court and cannot be made against a woman.
- The court can provide relief to the abused by passing orders preventing the abuser from aiding or committing any kind of domestic violence on the victim and making or attempting to communicate or keeping any kind of contact with the victim.

- The draft Act provides for appointment of Protection Officers and NGOs to provide assistance to the woman with respect to medical examination, legal aid, safe shelter, etc.
- The Act provides for breach of protection order or interim protection order by the respondent as a cognizable and non-bailable offence punishable with imprisonment for a term which may extend to one year or with fine which may extend to twenty thousand rupees or with both. Similarly, non-compliance or discharge of duties by the Protection Officer is also sought to be made an offence under the Act with similar punishment.

### **The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013**

The Act is a legislative act in India that seeks to protect women from sexual harassment at their place of work. It was passed by the Lok Sabha (the lower house of the Indian Parliament) on 3<sup>rd</sup> September, 2012. It was passed by the Rajya Sabha (the upper house of the Indian Parliament) on 26<sup>th</sup> February, 2013. The Bill got the assent of the President on 23<sup>rd</sup> April, 2013. The Act came into force from 9<sup>th</sup> December, 2013. This statute superseded the Vishakha Guidelines for prevention of sexual harassment introduced by the Supreme Court of India. It was reported by the International Labour Organization that very few Indian employers were compliant to this statute. Most Indian employers have not implemented the law despite the legal requirement that any workplace with more than 10 employees need to implement it. The government has threatened to take stern action against employers who fail to comply with this law.

#### **MAJOR FEATURES**

- The Act defines sexual harassment at the work place and creates a mechanism for redressal of complaints. It also provides safeguards against false or malicious charges.
- The Act also covers concepts of 'quid pro quo harassment' and 'hostile work environment' as forms of sexual harassment if it occurs in connection with an act or behaviour of sexual harassment.
- The definition of "aggrieved woman", who will get protection under the Act is extremely wide to cover all women, irrespective of her age or employment status, whether in the organised or unorganised sectors, public or private and covers clients, customers and domestic workers as well.
- While the "workplace" in the Vishaka Guidelines is confined to the traditional office set-up where there is a clear employer-employee relationship, the Act goes much further to include organisations, department, office, branch unit etc. in the public and private sector, organized and unorganized, hospitals, nursing homes, educational institutions, sports institutes, stadiums, sports complex and any place visited by the employee during the course of employment including the transportation. Even non-traditional workplaces which involve tele-commuting will get covered under this law.
- The Committee is required to complete the inquiry within a time period of 90 days. On completion of the inquiry, the report will be sent to the employer or the District Officer, as the case may be, they are mandated to take action on the report within 60 days.
- Every employer is required to constitute an Internal Complaints Committee at each office or branch with 10 or more employees. The District Officer is required to constitute a Local Complaints Committee at each district, and if required at the block level.
- The Complaints Committees have the powers of civil courts for gathering evidence.

- The Complaints Committees are required to provide for conciliation before initiating an inquiry, if requested by the complainant.
- The inquiry process under the Act should be confidential and the Act lays down a penalty of Rs.5,000/- on the person who has breached confidentiality.
- The Act requires employers to conduct education and sensitisation programmes and develop policies against sexual harassment, among other obligations.
- Penalties have been prescribed for employers. Non-compliance with the provisions of the Act shall be punishable with a fine of up to ₹50,000. Repeated violations may lead to higher penalties and cancellation of licence or registration to conduct business.
- Government can order an officer to inspect workplace and records related to sexual harassment in any organisation.

## CYBER CRIME

Cyber crimes can be defined as the unlawful acts where the computer is used either as a tool or target or both. It is a broad term used to define criminal activities in which computer or computer networks are a tool, a target or a place of criminal activity and include everything from electronic cracking to denial of service attacks. It also covers the traditional crime in which computers or networks are used to enable the illicit activity. In a report published by National Crime Records Bureau Report (NCRB 2011), the incidence of cyber crimes under the IT act has increased by 85.4% in the year 2011 as compared to 2010 in India.

### The Information Technology Act, 2000

**Section 66E. Punishment for violation of privacy.**-Whoever, intentionally or knowingly captures, publishes or transmits the image of a private area of any person without his or her consent, under circumstances violating the privacy of that person, shall be punished with imprisonment which may extend to three years or with fine not exceeding two lakh rupees, or with both.

**Section 67. Punishment for publishing or transmitting obscene material in electronic form.**-Punishable on first conviction with imprisonment of either description for a term which may extend to three years and with fine which may extend to five lakh rupees and in the event of second or subsequent conviction with imprisonment of either description for a term which may extend to five years and also with fine which may extend to ten lakh rupees.

**Section 67A. Punishment for publishing or transmitting of material containing sexually explicit act, etc., in electronic form.**- Punishable on first conviction with imprisonment of either description for a term which may extend to five years and with fine which may extend to ten lakh rupees and in the event of second or subsequent conviction with imprisonment of either description for a term which may extend to seven years and also with fine which may extend to ten lakh rupees.

**Section 67B. Punishment for publishing or transmitting of material depicting children in sexually explicit act, etc., in electronic form.**- Punishable on first conviction with imprisonment of either description for a term which may extend to five years and with fine which may extend to ten lakh rupees and in the event of second or subsequent conviction with imprisonment of either description for a term which may extend to seven years and also with fine which may extend to ten lakh rupees: Provided that provisions of section 67, section 67A and this section does not extend to any book, pamphlet, paper, writing, drawing, painting representation or figure in electronic form— (i) the publication of which is proved to be justified as being for the public good on the ground that such book, pamphlet, paper, writing, drawing, painting representation or figure is the interest of science, literature, art or learning or other objects of general concern; or (ii) which is kept or used for bona

vide heritage or religious purposes. For the purposes of this section, children mean a person who has not completed the age of 18 years.

The above laws thus have been enacted in India to protect women and children from several forms of crime. Existences of such laws are protecting many children/women in India from different forms of crimes. However many of these victims fall prey to such crimes and are unable to protect themselves due to ignorance, lack of awareness about such laws. So it is time to make everyone aware of existence of these laws in India.

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# Analysis of Infrastructure Development in Punjab

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## INTRODUCTION

Infrastructure includes facilities like roads, railways, sewage, public transportation, ports, airports, telecommunication etc. required for the economy to run smoothly and efficiently. As a matter of Fact, it is important for the growth of Primary, Secondary or Tertiary sectors of economy and eventually decides the growth rate of that economy. Access, quality and price of infrastructure are all important drivers of a country's and a region's competitiveness, growth and poverty reduction. Lack of adequate infrastructure can limit gains in productivity, raise the cost of logistics and production, reduce business profitability, and constrain opportunities for economic and social progress.[1]

India being a developing country cannot over emphasis the need of creating Infrastructure in coming years. The Global Infrastructure Outlook reflects that rising income levels and economic prosperity is likely to further drive demand for infrastructure investment in India over the next 25 years. Around US\$ 4.5 trillion worth of investments is required by India till 2040 to develop infrastructure to improve economic growth and community wellbeing.[2]

Punjab is among the states in India with one of the best infrastructure in the country. State has encouraged various private players to make investments in infrastructure projects to enhance connectivity, communication networks, and develop the urban infrastructure in the State.

## EXISTING INFRASTRUCTURE IN PUNJAB

- 1. Road Network** - Punjab has an extensive road network of 108379 km as of 31<sup>st</sup> March, 2016 [3] through the length and breadth of the state. Different categories of roads and their road lengths are as follows - National Highways (2677 Kms), State Highways (1102.4 Kms), Major District Roads (1848.11 Kms) Other District Roads is (5179.85 Kms), link roads ( 62203 Kms ) [4]. Punjab have one of the highest road densities in India i.e 215 km per 100 sq. km.
- 2. Railway Network** - Delhi, Ambala and Ferozpur Division of Northern Railways serves the Requirement of railways in Punjab. Punjab have the rail routes of 2269.27 as of 31<sup>st</sup> march 2016 [5]
- 3. Airports** - There are 6 operational airports in Punjab – Chandigarh Airport, Ludhiana Airport, Sri Guru Ramdas Jee International Airport, Amritsar, Bathinda Air Force Station Airport and Pathankot Air Force Station Airport and Adampur Airport, Jalandhar [6]
- 4. Dry Ports** - Import and export is facilitated through 5 dry ports in the state (container freight stations/inland container depots) - Ludhiana, Jalandhar, Amritsar, DeraBassi and Bathinda.[7]
- 5. Energy** – Punjab has installed capacity of 13432.44 MW as of 28<sup>th</sup> Feb, 2019.[8]. It includes various state government, central government, joint and private power generation projects. GVK power plant Rajpura (1400 MW), Talwandi Sabo Power Project, Mansa (1980 MW), Guru Nanak Dev Thermal Plant, Bathinda ( 460 MW ) Guru Gobind Singh Super Thermal Power Plant, Ropar (1260 MW ), Guru Hargobind Thermal Plant, Lehra Mohabbat, Bathinda (920 MW) are various thermal power plants in Punjab. Ranjit Sagar Dam ( 600 MW ),

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Shanan Power House, JogendraNagar ( 110 MW ), Anandpur Sahib Hydel Channel, (134 MW ), Mukerian Hydel Project, Talwara (207 MW ), Uppar bari doab Canal Hydroelectric Power House, Malikpur ( 45 MW ), Bhakra Nangal Project,Bilaspur ( 1325 MW ) Pong Dam Project ( 396 MW ), Talwara, Dehar Power House, Mandi ( 990 MW ), Ranjit Sagar Dam Project, Pathankot ( 600 MW ), Shahpur Kandi Project, Pathankot ( 206 MW ) are various hydel Projects in Punjab. Apart from these number of small units produces electricity from biomass.

6. **Telecommunication** - As of 2017, Telecom subscribers reached 36.97 millions and Punjab have tele density of 118.28 [9]. Telecom Tower count in Punjab stands at 18602 [9]. There are 1467 telephone exchanges in Punjab as of December 2017 [10]
7. **Irrigation** –Agriculture sector accounts for about 85% of water consumption in the state. Out of the total area of 4158 Th. ha under agriculture in state, an area of 4070 Th. ha (97.9%) is getting irrigation from canals (27%) and tubewells(73%). There are about 10 major canals running through Punjab namely Sirhind canal, Nangal Hydel, Ferozepur Feeder, Sirhind Feeder, Rajasthan Feeder, Bist Doab, Upper Bari Doab, Mukerian Hydel, Bhakra Main Line, Bikaner Canal with the total capacity of about 229168 cusecs. As of 2016 there were 14.69 lakh of tube wells in Punjab [11]
8. **Water supply:** 99.1 % of villages had access to tapped drinking water during 2014. 12187 villages have access to tap water facilities ( 2014)[12]
9. **Sanitation:** Punjab has sewer network in 78.5 % of Wards. 80.4% of wards have street cleaning system. 86.7 % of rural households and 93.9 % of Urban household have sanitary toilets.[13] Punjab have claimed to be open defecation free on October 2, 2018
10. **Storage :** As of 31<sup>st</sup> march, 2017 there are 660 cold storages with the total capacity of 2155704 MT.[14]
11. **Health:** There is 4 tier structure for delivery of medical services in Punjab i.e dispensaries, Community health centres, Public Health centres, Hospitals. As of 2011 census, There are 62 Public Hospitals, 444 Public Health centre, 1308 dispensaries, 130 community health centres [15]
12. **Educational Institutions:** There are 6 universities and 267 colleges accredited by NAAC in the state [16]. As of 2011, there are 23999 schools in Punjab including primary schools, Senior secondary school, secondary school and upper primary schools. [17]

## **MAJOR UPCOMING INFRASTRUCTURE PROJECTS AND PROJECTS UNDER CONSTRUCTION IN PUNJAB[18]**

1. NH 64 ( Zirakpur to Bathinda ) and 4 laning of NH 15 ( Amritsar to Bathinda ) ;
2. Ajmer – Ludhiana Economic corridor ;
3. Green Field Super speciality hospital ( Mohali ) ;
4. 5 star hotel cum convention centre ( Ludhiana ) ;
5. 5 star hotel at Amritsar and Bathinda to promote Tourism ;
6. Bus terminal cum commercial complex ( Patiala and Mohali ) ;
7. 15 MW cogeneration Power Unit at Fazilka ;
8. Heritage Village Project ( Amritsar ) ;
9. Abohar Branch Canal System ( Faridkot ) ;
10. Bathinda Branch Canal System ( Bathinda and Mansa ) ;
11. Deep Tubewell ( Kandi area Project ) ;
12. Kotla Branch Canal System Part 2,



13. Sirhind Feeder Part 2 ;
14. Upper Bari Doab Canal system;
15. R-O-B project ( Amritsar ) ;
16. Mega Food Park at Ladhawal ( Ludhiana ) ;
17. Modernisation of Mukerian Hydel Power Plant ( Hoshiarpur ) ;
18. Solar Power unit ( Gammiwala, Sherkanwala, Magania, Todarpur, Teona Pujarian, Ahlpur, Kauriwara ) ;
19. Laying Qadian- beas Railway line ;
20. Institute of Hotel management at Bhootgarh;
21. Agro Park ( Ferozepur ) ;
22. IT /ITES Sez Project (Mohali);
23. Bus Rapid Transit System ( Amritsar ) ;
24. Solar Photo Voltaic Power Project ( Killianwali and Abohar ) ;
25. Solar Power Project ( Malout)
26. Solid Waste Management Project (Ferozepur ) ;
27. Modernisation of Bathinda Thermal Power Plant;
28. Biomass based Power Project (Burj Bagel Singh, Jhook Tehal Singh, Ludhiana, SBS, Birpind) ;
29. Dry port at Kila Raipur (Ludhiana)
30. Mega Food Park ( Fazilka ) ;
31. Shapur Kandi Hydroelectric Power Project;
32. Aero city Development Project ( Mohali ) ;
33. Rajsansi airport Ranovation Project ;
34. IT city Infrastructure Project ( SAS nagar ) ;
35. Kajauli – Mohali Water Supply Scheme

## **ANALYSIS OF STATE OF INFRASTRUCTURE IN PUNJAB**

Following analysis can be made in respect of various infrastructure facilities in state -

- (a) Road density in Punjab (215) is one of the highest in the country but despite the extensive road network in state, roads in Punjab are not safe. On an average 12 people lose their lives on roads in the State every day. 4278 people got killed in road accidents in 2017.[19] More safety infrastructure need to be in place
- (b) Irrigation infrastructure in the state is exemplary. The state has highest net irrigated area (percentage) in the India. Certain shortcomings have been found in the quality of infrastructure and its maintenance like seepage problems from canal resulting into water logging and silting problems of canal reducing their capacity. Tube wells are replacing the canal irrigation due to these issues.
- (c) Energy infrastructure in the state have provided state with the capacity to provide 24x7 power supply to various needs of State. Punjab has been selling electricity to neighbouring states due to surplus generation. Punjab have been even working on its energy mix as number of power plants based on biomass are being encouraged. Major criticism of Punjab in terms of power generation is its cost of electricity which is one of the highest in the country.
- (d) Water supply Accessibility status of Tap Water facilities per thousand households has improving from last few years both in Urban and rural areas. But average is higher in urban areas, because in Rural areas alternate sources of drinking water are available
- (e) Under Mission Tandarust Punjab, the State has been declared open defecation free. There have been considerable expenditure on sanitation infrastructure in last few years making the it very resilient

- (f) Till 1990, Punjab was considered pioneer in terms of healthcare. Since then number of public hospitals, Public health centres, community health centres, dispensaries have either decreased or are stagnant in number. As per the National Health Profile 2015, a family in Punjab spends Rs 196.5 from its own pocket every month on healthcare whereas a family in Haryana spends Rs 131, in Jammu & Kashmir Rs 95 and Himachal Pradesh Rs 134.5.
- (g) In terms of number of Educational institutions, Punjab has done exceedingly well compared to its counterparts. But in absolute terms the condition is pathetic – Government schools lack classrooms, basic teaching infrastructure and lack basic amenities for students like desks, their winter uniform etc. Quality of higher education is on decline and cost is on rise since the privatisation of education has started in Punjab and government has been receding from the field. As per the recent National Sample Survey (NSS) data, the private players have become the major higher education providers in Punjab (their student share is approximately 71 per cent, and that of government institutions 29 per cent)

## CONCLUSION

Although there are number of issues and lot of criticism in relation to state of infrastructure in Punjab but in comparison to other states, Punjab still ranks fairly well. It is evident from India Today's State of States Survey 2018, where Punjab ranked 3 in Infrastructure category ( rise from rank 7 in 2017 ).

Still, Infrastructure in the state needs investment in order to attract investments in industry and Agriculture, make business competitive and promote general public welfare along with standard of living. Thus, the Punjab government should scrutinize the various infrastructural bottlenecks and take steps accordingly. It will help bring more revenue to the state in the long run.

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# A study on the Infrastructural Facilities of High Schools of Batadrava Block, Nagaon Districts, Assam

Afjalur Rahman\*

## ABSTRACT

School is a formal agency of Imparting education or knowledge to children. It prepares children as a good citizen of country. School in an agency of social reconstruction. It is school which provides minimum general culture to all the pupils which are indispensable for a successful living in the present day society. School is the agency of social change and modernization. School by its education can prepare individuals to accept the welfare and benefit of the children. Efficiency of learning largely depends upon the physical resources or material condition available in school. In absence of an improved physical condition, quality education is unthinkable. The present study is an attempt to find out clear picture or exact data about the Infrastructure facilities of High Schools of Batadrava Block. The sample consisted of 20 High schools of Batadrava Block of Nagaon District of Assam. The material conditions of school are not satisfactory. Most of the schools of this area are lagging behind in material facilities.

**Keywords:** Infrastructure, facility, Efficiency of learning.

## INTRODUCTION

The term of school originated from the Greek word 'skhole' means leisure or lecture place. The reason of associating the leisure with school is perhaps the fact that in ancient Greece, liberal education was not comported to all members of the society. It was a privilege of highest class in society which had enough to cultivate the specialized aspects of culture through liberal education. In such a society school as an institution which was mainly concerned within a stage human life. In which leisure pro dominated came to be styled as leisure. School is the formal agency of imparting education or knowledge to children. It prepares children as good citizen of country. J. S. Ross says, Schools are the institution devised by civilized man for the purpose of living in the preparation of young for well- adjusted and efficient members of the society. School is an agency of reconstruction. It helps in making a society as a good society by preparing all individual as good member. School maintains the continuity of social life by transmitting traditions, values and customs from one generation to another. It is school which provides minimum general culture to all the pupils which are indispensable for successful living in the present day complex society.

School is the agency of social change and modernization. School by its education can prepare individuals to accept the change and take part in the change. Education is the process which accelerates the process of social change. S. Balkrishna has rightly remarked. The progress of a nation is decided not in legislature not in court not factories but in school. Therefore the whole organization of the school is maintained for the welfare and benefit of the children. Efficiency of learning and teaching largely depends upon the physical resources or the material condition available in school. In absence of an improved physical condition, quality education is unthinkable. A school in its physical sense may be describing as the educational workshop to build up personality in the

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child. People are now more conscious of the need of a better school for education and development of their children. They naturally think of a better school that can give quality education. This general consciousness of people has, therefore, urged the educational administrator to make provision for a better school plant. School building is an important component of the material condition of school. A school building symbolizes gravity of learning of an educational institution. A good school building attracts individual towards the school and also develops the balanced personality of the student. School buildings signifies, honour and sense of every individual belonging to the school. It can create necessary motivation in mind of the students for their learning and doing. A poor and unimpressive school building has its negative effect in the mind of the school people. Dr. Jaswant Singh says, while it is true that a bad man blames his tools. It is contain that the best work can only accomplished with the best tools. With the rapid growth and development of education, the importances of building facilities of school have been increased. Schooling in ancient India was done ashrams, situated for away from the towns. In the natural surroundings of the greenery and foliage. In those days children sent to Gurukul for education following the upayana ceremony. Dr. A. S. Altekar says, The Gurukul system which necessitated the stay of students away from his home at the home of the teacher or boarding house of the established reputation was one of the most important features of ancient Indian education.

During Buddhist period education was imported at Monasteries and Bihar which was created for the purpose of school. At that period some big buildings were constructed to impart higher education such universities of Nalanda, Takshashila, Vikramshila. Buddhist period constructed a lot development of education and ducational institutional were also separated from religious centre. During Muslim period education was imported in Maktabas and Madrassa. Maktabas were generally attached to Mosque which provide primary education and Madrassa and Madrassa provides higher education and had own building established for the purpose. So education becomes institutionalization during this period. In British regime... after the issue of Woods Dispatch, the government undertook the responsibility of opening schools some of the schools were opened here and mostly in the urban areas modesty beginning was made in equipping the schools materially on the western pattern. At the early 19th century Christian Missionaries had open educational institution in different part of the country.

After independence different schemes & measures have been taken to improve the material condition of the school but are not developed as it expected. We are still backward in this respect. Though there is an improvement in building facilities of school at primary school level in recent times but the condition of secondary school is poor. It is highly essential to pay attention to the building facilities of secondary school. Because a good school building is always essential for realizing the objectives of the education especially at the secondary stage. The educational planners are agreed that the school building should be situated in a healthy proper place for away from the din and bustle of the town because if school building is constructed in a busy, noisy, place, the attention of the student will be affected.

## **NEED AND SIGNIFICANCE OF THE STUDY**

School building as material resource very important in educational scheme. As formal institutions, it should have a good building to attract the student. Most of the secondary schools are not well built and their conditions are very poor. It does not fulfill the need of student properly because of which students are not motivated towards the school. In Assam different research have been done in order to study material conditions of the school. But in the field of secondary stage the number is very less. However no such work has been undertaken in Batadrava Block of Nagaon District.

Majority of the people of this area are aware about the condition of school. Thus is very urgent need of time to study the infrastructural conditions of the secondary school stage. As such the present study has been taken to the study of the infrastructural conditions of High schools of Batadrava Block of Nagaon District.

## **STATEMENT OF THE PROBLEM**

The infrastructural facilities of the schools are not development in this area. So there is a need of studying deferent aspects of infrastructural facilities. Therefore the proposed study is named as 'A study on the infrastructural facilities of High schools of Batadrava Block, Nagaon District, Assam.

## **OBJECTIVE OF THE STUDY**

The main objectives of the present problems are:

- (i) To find out the clear picture or exact data about the infrastructural facilities of high schools of Batadrava Block of Nagaon District.
- (ii) To know whether the building facilities of this area are backward in comparison of the other areas of the state, Assam.
- (iii) To make an accurate study of existing position and types of the school building.
- (iv) To make the detailed study about the conditions of classroom provided.
- (v) To know the pattern and model of school building of the area.
- vi) To create awareness among teachers and people about the importance of school building.
- (vii) To make a comparative study of Government and non-government school regarding the building facilities in the area.

## **HYPOTHESIS OF THE STUDY**

In order to achieve the objectives of the study following hypothesis are formulated. It is assumed that-

- (a) The building facilities of secondary school are not satisfactory. Most of the school buildings of the area of Assam type.
- (b) In most of school building there is no provision of separates library, reading room and laboratory.
- (c) Most of the school have playground but gymnasium hall.
- (d) Most of the schools have no provision for Hostel and staff quarter.
- (e) In most of the school there is no provision of common room and toilet facilities for student.

## **AREA OF THE STUDY**

The proposed study will be conducted on the infrastructural facilities of High Schools of Batadrava Block is one of the oldest Block of Nagaon District. The office of the Batadrava Block is situated at 25 Kilometers distance from District Head Quarter of Nagaon. The population pattern of the area is mixed. There are mainly two religious groups of people live in this area as Mohammedian and Hindu. There are different communities in this area as Assamese, Muslims, Bangali, Tribels like Tiwa and Bodo. The languages of the people of this area are mainly Assamese, Bangla and Bodo.

## **DELIMITATION OF THE STUDY**

The study limited to the High schools of Batadrava Block of Nagaon District of Assam. However the study includes the schools Urban and Rural area, Government, Government aided and Private Schools.

## RESEARCH METHODOLOGY

In the present study the investigator adopted descriptive survey method.

## METHOD OF DATA COLLECTION

In the present study, the questionnaire and interview schedule have been applied for collecting data. Questionnaire is made for Headmaster/Principal. In the present study the investigator adopted descriptive survey.

## SAMPLE SELECTED FOR PRESENT STUDY

In the present study satisfied purposive sampling has been adopted for the selection of sample population. The population study of this study is High Schools of Batadrava Block of Nagaon District of Assam. Regarding the selection of schools, the investigator has prepared a list of all High schools of Block. There are about 25 High schools from which 20 schools were selected and have been taken account for the data collection.

## FINDING AND SUGGESTIONS

### Major Findings of the Study

1. The study reveals that 90% of the sample schools have Assam type building. only 10% of the sample schools have Kachcha building.
2. It reveals that 70% of the sample schools have provision of separate Headmaster/ Principal.
3. It is found that 90% of the sample schools have provision of separate teacher's common room.
4. It has been revealed from the study that only 10% sample schools have separate common room for students.
5. All the sample schools have verandah and windows.
6. This study shows that only 40% schools have library facility.
7. It found that Laboratory provisions of the most of the schools are not satisfactory. Only 10% schools have laboratory.
8. The study reveals that 70% of the sample schools have computer facility.
9. The internet facilities of the sample are not satisfactory. Only 10% schools have internet facility.
10. The study reveals that 10% sample have radio facility and none of the schools have television facility.
11. The study reveals that drinking water facility is satisfactory, 90% of the sample has drinking water facility.
12. The provisions of hostel facilities are very poor. Not single schools have any provision of facility.
13. The provision of toilet facility for teacher and student is satisfactory. 90% Sample schools have toilet facility for teacher and student.
14. This study reveals that only 10% of the sample schools have seminar Hall.
15. From the study it is found that all the sample schools have a playground.

## SUGGESTION

From above findings it seem that building and other material conditions of schools are not satisfactory. Most of the schools of this area are lagging behind in material facilities. An ideal school

has all types of facilities, so to make schools in an ideal attention to be provided to prove the material condition. In order to improve the condition of schools and to development the standard of education all authorities of education state government. District authorities and Dept. of education should take positive steps and immediate action. The development of education in this area will contribute towards the development of the state and enrichment of the country as a whole.

Therefore following suggestions may be mentioned to improve educational development in this area.

- (i) **The site of school:** The site of school cannot be anywhere and everywhere. Efficient schooling depends considerable up on the site and situation of the school. Selection of site is very important matter and in site selection rural and urban factor must be considered. The school site should be located at congenial and pleasant environment. In case of rural area, it should not be far away so children find difficulty to reach it. In when area should not be near to factory, market, railway station and crowded place, if it is constructed in such busy and noisy place will divert the attention. The place should be high and dry and capable of maintaining physical health and hygiene of the student. There should be adequate sunlight during the entire school day and above all, the surrounding area of the school campus should be neat and clean.
- (ii) **School building:** A good school building attracts student towards school. A school building is one which comprise of all essential facilities. The school building should meet the immediate needs, as well as perspective needs of the locality for education its younger stars.

Therefore, it is suggested that proper care should be taken in construction of school and to make building attractive. In this respect following factors are taken into consideration in school building.

- (a) Planning of the school building needs to be made into consideration of various academic needs and interest of teacher and students.
- (b) Emphasis should be given to make the outward appearance beautiful and attractive.
- (c) Most of the building are U, L, H pattern but E and I pattern may be considered more convenient.
- (d) While constructing school building care should be taken to see that sufficient light, heat and air may be available in each and every room. It should have windows and ventilators.
- (e) Assam type building should concert into single stories or two stories building in a phase manner.
- (f) The school building should be located in neat and clean surroundings. Provision should be made for future expansion of building in view of the growing demand of education.

## **Headmaster room**

Separate Headmaster/Principal room should be constructed in the school for smooth running of administrative work. It should be centrally constructed to make administration more convenient.

## **Office room**

With the change of time duties and responsibilities as well as work load increased. So, it is suggested to make provision of separate office and it should spacious. Higher authorities took after the matter seriously.

## **Teacher's common room**

Teacher's common room should be separated from Headmaster room. It should be spacious and must have attached bathroom.

### **Student's common room**

It is suggested that every school should be make provision of students' common room. More emphasis should be given to improve the existing students' common room of the school.

### **Library**

More emphasis should be given to make provision of library and to improve the existing library. The government should take special measures to provide more fund the improvement of library.

### **Reading room**

It is suggested to every school authority to build reading room in each and every school. Students should be encouraged to develop reading habits.

### **Laboratories**

Every school should make provision for laboratory and if possible make provision of separate laboratory facility for physics, chemistry and biology.

### **Playground**

Though most of the schools have playground but emphasis should be given to the ground usable for different types of games.

### **Seminar Hall**

Government should give attention to provide seminar hall or Assembly Hall to every school.

### **Gymnasium Hall**

To improve the health and hygiene facility and all-round development of student gymnasium hall should be established.

### **Store Room**

At least one storeroom should be constructed to store the surplus furniture and other materials.

### **Staff Quarter and Hostel**

It is suggested to make provision of hostel facility to the selected urban school. Quarter facility to provided to schools in phase manner.

Beside the above suggestion other suggestion on the basis of the findings of  
Study area -

- (i) To make boundary wall of the school and steps be taken by school authorities to make the campus neat and clean.
- (ii) Much emphasis should be given on training of school and to increase the number of trained teacher.
- (iii) Government and higher authorities should take steps to fill up the vacant post to maintain the male female ration.
- (iv) The government and authorities may provide financial grant to improve the building facilities.



- (v) School authorities make take initiative to make provision of income sources other than government fund. It helps in meeting day to day expenses of the school.
- (vi) Local people should be conscious and cooperative with school authority to make a suitable school environment.

The suggestions which are mentioned above are very essential for improvement of infrastructural facilities at Batadrava Block of Nagaon District. Beautiful buildings or surroundings are very important factor in generating a congenial atmosphere in the teaching learning process. So, the government and higher education authorities should take necessary steps for the improvement of building condition.

## CONCLUSION

The suggestions which are mentioned above are very essential for improvement of infrastructural facilities of school. Individual behaviour, reaction and the growth of this Psycho--physical experience largely depends on such material condition of learning which is called school. The school plant is a physical situation that constitutes totally of the physical resources needed for education and development. It plays a vital role in educational process.

A school in this physical sense may be described as the educational workshop to build up personality in the children. People are more conscious of the need of a better school for education and development of their children. A good school can provide conducive environment for learning. The attractive and beautiful school building generate a congenial atmosphere in the teaching learning process. So, more attention should pay at selection of suitable site for construction of school building, arrangement of class room, library, reading room, toilets, hostels etc. It will meet the needs of children in their educational development. Therefore, in the construction of school building authority should be conscious in selecting site and follow the models of a good school building. The location of the school should be in a well known place. Everybody expects that a good school should be housed in a building which is not only stimulating center of education for children but also vital center of community life. There are some prescribed rules and regulations for constructing the school building. The school building should always well ventilated, free space of air, minimum area accommodate a certain number children and beautiful garden. Therefore, government should pay attention in constructing school buildings and Headmaster, teacher and student should be conscious to make the school environment neat and clean.

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# To Study Phytotoxic Effect of Different Parts of Croton Bonplandianum Baill. Collected at Flowering Stage of Growth

Dr. Gajendra Kumar\*

## ABSTRACT

Croton bonplandianum may be attributed to the presence of variable amount of phototoxic substances in different parts that leach out under natural condition. The croton bonplandianum is an obnoxious weed of family Euphorbiaceae. Release of phytotoxic Chemical during the Preparation of aqueous extract under natural condition, metabolites including organic acid, minerals. Carbohydrate and amino acid are release the phytotoxicity of the weed during its heavy infestation in the croplands aqueous extract inhibitory effect are attributed to change in pH and osmotic potential, pH of extract ranged from 6.13 to 6.68, op ranged 0.43 bars to effect on the plant growth. Growth in terms of seedling root length, shoot length, dry weight of Crop plants like Triticum aestivum L. Brassica oleracea and weed plant like Vicia Sativa and Medicago hispida Gaertn.

**Keywords:** Phytotoxic Substance, Organic acid, Carbohydrate, Croplands aqueous extract, PH, Osmotic Potential, Seedling root.

## INTRODUCTION

Croton bonplandianum is invasive in nature due to its favourable growth attributes and high reproductive potential. Its found to be retardatory toward growth of Various test plants. Croton bonplandianum exhibits phytotoxicity the leaves were most phytotoxic in nature.

Croton bonplandianum is an obnoxious weed of family Euphorbiaceae. Crop Plants Triticum aestivum L. Brassica oleracea Var botrytis and Brassica rapa L. and weed plant Melilotus alba Medik, Vicia Sativa L. and Mdicago hispida Gaeten, in response to different concentration of extract prepared from root, stem and leaves collected at flowering stage, PH, osmatic potential and phenolic content also extracts.

In, Bihar specially Madhepura district, wheat (Tritium aestivum L.), Cauliflower (Brassica oleracea-botrytis), Turnip (Brassica rapa) widely cultivated.

## MATERIALS AND METHOD

Leaves stem and roots were separately collected from the field growing C. bonplandianum at flowering stage, dried, powdered and stored in polyethylene bags till further used. For each part, aqueous extracts of different concentrations were prepared and for this purpose, twenty seeds of crops as well as weeds were placed in 15 cm Petri dish lined with a thin layer of cotton and Whatman no. 1 filter paper, moistened with 15 ml of each extract or water (to serve as control). Five replicates were maintained and arranged in a completely randomized block design for each treatment. After 15 days, seedling growth in terms of root length, shoot length and dry weight were measured.

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## RESULTS AND DISCUSSION

Effect of aqueous extract prepared from root of *C. bonplandianum* Seedling Root Length

The root length of both the test plants (crop and weed) under investigation when grown in aqueous extract of roots, lesser than that of control. In control, the maximum growth was seen in *T. aestivum* (8.20 0.33 cm) followed by (7.440.21 cm) in *N. oleracea* var. *botrytis* and (6.870.84 cm) in *B. Rapa* nut in weed plants root length was (9.220.25) in *M. alba* followed by *V. sativa* (6.880.55 cm) and *M. hispida* (6.200.48 cm). When the set-up was subjected to the aqueous extract of roots, the lengths of roots were measured to be relatively shorter than their respective control. In case of all these test plants, reduction in root length was increased with increasing concentration and it was maximum in *B. oleracea* var. *botrytis* (82.84%) and minimum (55.74%) in *V. sativa* at 4%.

### Shoot Length

Like, roots length, the shoot of crop plants was measured to be maximum (12.460.15 cm) in *T. aestivum* followed by that of *B. oleracea* var. *botrytis* (11.560.35 cm) and *B. rapa* (10.880.49 cm) while in weed plants, maximum shoot length was in *M. alba* (12.840.25 cm) followed by *V. sativa* and *M. hispida* (11.800.31 cm) and (9.460.36 cm) respectively in control, when test plants grown in aqueous extract of roots the plumule length were shorter than their respective values in control. Very strong effect was seen at highest concentration (4%) and among all the test plants about 69.02% to 75.8% reduction were observed. The values of correlation coefficient between shoot length and concentration of aqueous extract of root were strong in each of the cases. The values ranged from -0.945 to 0.995.

### Dry Biomass

Maximum content of dry biomass was also noticed in case of crop plants (77.530.25 mg/seedling) in *T. aestivum* followed by *B. oleracea* var. *botrytis* (31.200.36 mg) and *B. rapa* (26.120.19 mg). Like radical and plumule lengths in weed a plant, the maximum dry weight was seen in the case of *M. alba* (25.360.77 mg) followed by *V. Sativa* (23.230.77 mg) and *M. Hispida* (18.110.35 mg). In contrast to the control grown plants, those grown in aqueous extract of root, the dry biomass was relatively less. Reduction was observed in all test plants about 54.39% to 63.96% at 4% concentration.

### Osmotic Potential (OP)

Further, the osmotic potential of extracts prepared from the different parts (root, stem and leaves) was also measured. The values of OP ranged from 0.43 bars to 0.99 and it was observed that the OP increased with increasing concentrations and was statistically significant.

### Phenolic Content

The amount of phenolics was also determined in the same extracts prepared from different parts at flowering stage. In leaves extract, amount of phenolic was about 828 at 4% concentration. Among all the extract of different parts, phenolic content was the maximum in leaves and minimum in stem. The difference between extract and concentration was statistically significant.

It is clear from the present study that different parts of *C. bonplandianum* exhibited phytotoxic potential through their aqueous extracts, though the magnitude of phytotoxicity varied with plant part (i.e. root, stem and leaves). The study, therefore, indicated that some growth inhibitors are present in the extract that might be affecting the growth of the test plant-*T. aestivum*, *B. Rapa*, *B. oleracea* var. *botrytis*, *M. alba*, *V. sativa* and *M. hispida*. A number of studies have indicated that aqueous

extracts of weed, are phytotoxic in nature and thus reduce the growth of other plants, (Quasem and Foy, 2001; Bulut et al., 2006). Some recent studies indicating the phytotoxic/allelopathic effect of aqueous extract of weeds include *Mikania micrantha* (Ismail and Kumar, 1996; Sisodia and Siddiqui, 2007c), *Vulpia* sp. (An et al., 1999) *Cyperus rotundus* (Quayyum et al., 2000), *Cardaria draba* (Kiemnec and McInnis, 2002), *Parthenium hysterophorus* (Batish et al. 2002a; Singh et al., 2003a; Javaid et al., 2006), *Brassica nigra* (Tawaha and Turk, 2003), *Raphanus raphanistrum* (Norsworthy, 2003), *Ageratum conyzoides* (Batish et al., 2002b; Singh et al., 2003b, c) *Lucerne* varieties (Zhihua and Yixin, 2005), Chinese fir leaves (GuoChang et al., 2007) and *Oryza Sativa* (Punjabi, et al., 2006). All these studies indicated that the release of phytotoxic chemicals during the preparation of aqueous extracts, under natural conditions, metabolites including organic acids, minerals, carbohydrates and amino acids are released or leached from various parts of plant including foliage, stem, flowers and fruit of the plant by forming aqueous solution with rainwater, dew water and mist (Tukey and Morgan, 1964). Through this process, a number of phytotoxic chemicals are also leached that bring about inhibitory effects on the other plant (Rice, 1984). The phenomenon of leachate is wide spread.

**Table:1 Values of pH, osmotic potential and content of phenolic in different concentration of extracts of leaves, stem and roots of *C. bonplandianum***

Parameters	Extract concentration	Root	Stem	Leaves
pH	0.5	6.59 <sup>a</sup>	6.68 <sup>a</sup>	6.66 <sup>a</sup>
	1.0	6.52 <sup>b</sup>	6.41 <sup>a</sup>	6.52 <sup>b</sup>
	2.0	6.31 <sup>c</sup>	6.26 <sup>b</sup>	6.42 <sup>c</sup>
	4.0	6.13 <sup>d</sup>	6.11 <sup>a</sup>	6.35 <sup>d</sup>
Osmotic potential (-bars)	0.5	0.43 <sup>d</sup>	0.59 <sup>d</sup>	0.46 <sup>d</sup>
	1.0	0.59 <sup>c</sup>	0.72 <sup>c</sup>	0.79 <sup>c</sup>
	2.0	0.68 <sup>b</sup>	0.92 <sup>b</sup>	0.88 <sup>b</sup>
	4.0	0.73 <sup>a</sup>	0.99 <sup>a</sup>	0.96 <sup>a</sup>
Total phenolic content ( $\mu\text{g/ml}$ )	0.5	113.2 <sup>d</sup>	44.13 <sup>d</sup>	499.13 <sup>d</sup>
	1.0	224.56 <sup>c</sup>	49.73 <sup>c</sup>	512.30 <sup>c</sup>
	2.0	333.11 <sup>b</sup>	58.23 <sup>b</sup>	532.46 <sup>b</sup>
	4.0	543.27 <sup>a</sup>	73.57 <sup>a</sup>	828.06 <sup>a</sup>

\*Different alphabets within in a column represent significant difference at  $P < 0.05$ .

## CONCLUSION

Therefore, on the basis of this observation following conclusions can be made:

- Different part of *C. bonplandianum* exhibit differential phytotoxicity and the degree of phytotoxicity with respect to plant was in the order:
- Leaves > Roots > Stems
- Leaves being more in biomass per plant contributed relatively more towards phytotoxicity compared to other parts of the plant.
- Presence of Phenolics imparted the allelopathic/phytotoxic property to the different parts as evidenced from their amount and degree of inhibition of test plants.

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# राष्ट्र के विकास एवं राजनीति में महिलाओं का योगदान

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## सारांश

यत्र नार्यस्तु पूज्यन्ते, रमन्ते तत्रा देवता। भारतीय संस्कृति में नारी सदा ही शक्ति के रूप में पूजनीय रही है। प्राचीन काल से हमारे ऋषियों की मान्यता रही है कि जहाँ नारी की पूजा होती है, वहाँ देवता निवास करते हैं। चाहे वैदिक काल में नारियाँ रही हो अथवा उन्नीसवीं व बीसवीं सदी की क्रांतिकारी महिलाएं रही हो या आजकी राजनीतिक महिलाएं हो, ये सभी नारी शक्ति के विभिन्न रूप हैं। नारी में ममता, धैर्य, करुणा, दया, प्रेम, त्याग एवं समर्पण ये सभी गुण विद्यमान हैं। परन्तु फिर भी महिलाओं को आज भी समाज में उचित सम्मान नहीं मिला है। आज भी उनके साथ अपराध एवं अत्याचार दिनों दिन बढ़ते जा रहे हैं। ये महिलाओं पर हो रहे अत्याचार राष्ट्र के विकास एवं संस्कृति में बाधक हैं। महिलाओं के प्रति जो लोगो की खराब सोच, मानसिकता है उसे दूर करके उन्हें देश, समाज एवं राजनीति में उचित सम्मान दिलाया जा सकता है।

महिलाओं को आधुनिक तकनीकी शिक्षा के द्वारा प्रशिक्षित कर एवं समान अवसर प्रदान कर महिलाओं को राष्ट्र के विकास में उपयोग किया जा सकता है। भारतीय संस्कृति, राष्ट्र के विकास एवं राजनीति में नारी का बहुत बड़ा योगदान रहा है। इस शोध पत्र के माध्यम से महिलाओं का राष्ट्र के विकास एवं राजनीति में योगदान की व्याख्या की जा रही है।

**मूल शब्द :** राष्ट्र के विकास, समाज, राजनीति, महिलाओं, सम्मान, योगदान

## प्रस्तावना

एक राष्ट्र के विकास में महिलाओं का योगदान बहुत महत्वपूर्ण है। कोई भी राष्ट्र तभी विकास कर सकता जब तक की उस देश की नारी जाति देश के विकास में पूर्ण रूप से भागीदार हो। आज की महिला केवल माँ, बहन, बेटी, पत्नी नहीं रही है बल्कि इसके आलावा एक शिक्षक, डॉक्टर, इंजीनियर, कलेक्टर, पुलिस अधीक्षक, वैज्ञानिक, अंतरिक्ष विज्ञानी, वित्तमंत्री, मुख्यमंत्री, अंतर्राष्ट्रीय खिलाड़ी, सेना में मेजर/ कर्नल, बैंको की प्रबंध निदेशक आदि के रूप में कार्य कर राष्ट्र के विकास में योगदान दे रही है। राष्ट्र के विकास एवं राजनीति में महिलाओं के योगदान का निम्नलिखित आधार पर विवेचन किया जा रहा है :-

**परिवार में योगदान :** एक महिला का परिवार में महत्वपूर्ण स्थान होता है। एक परिवार को बाँध कर रखने का कार्य एक महिला ही कर सकती है। एक बच्चा जब जन्म लेता है तो उसका सबसे पहला शब्द

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माँ ही होता है तथा एक बच्चे की प्रथम गुरु माँ ही होती है। एक बच्चे को माँ ही बताती है की क्या अच्छा है तथा क्या बुरा है। एक महिला अपने परिवार में बच्चों को अच्छी शिक्षा देकर राष्ट्र प्रेम, ईमानदारी, मेहनत, जिम्मेदारी की भावना का विकास करती है। एक महिला माँ, बहन एवं पत्नी के रूप में सभी को अपनापन एवं प्रेम प्रदान करती है।

**समाज में योगदान :** मनुष्य एक सामाजिक प्राणी है तथा बिना मनुष्य के समाज की कल्पना भी नहीं की जा सकती है। एक समाज में महिला का महत्वपूर्ण स्थान है। मदर टेरेसा ने पुरे देश में दीन, दुखी, पीड़ितों की आजीवन निस्वार्थ सेवा कर राष्ट्र के विकास में योगदान दिया जिसके लिए उन्हें भारत के सबसे बड़े सम्मान भारत रत्न से सम्मानित किया गया। बालिका शिक्षा के क्षेत्र में विकास के लिए श्रीमती सावित्रीबाई फुले का बहुत बड़ा योगदान है। पर्यावरण संरक्षण के कार्य करने के लिए श्रीमती मेधा पाटकर का बहुत बड़ा योगदान है। समाज सेवा के क्षेत्र में प्रमिला दंडवते एवं डॉ. रंजना कुमारी का भी योगदान रहा है।

**खेल के क्षेत्र में योगदान :** हमारे देश में खिलाड़ियों के लिए संसाधनों की बहुत बड़ी कमी है लेकिन इसके बावजूद भी खिलाड़ी पूरी मेहनत के साथ तैयारी करते हैं। खेल के क्षेत्र में भारतीय महिला खिलाड़ियों में गीता फोगट, साक्षी मलिक (रेसलिंग), मिथालीराज (क्रिकेट), दीपिका कुमारी (आर्चरी), दीपा कर्माकर (जिमनास्टिक), तानिया सचदेव (चेस), बूला चौधरी (स्वीमिंग), आकांक्षा सिंह (बास्केटबाल), पी.वी. सिंधु, साईना नेहवाल (बेडमिन्टन), सानिया मिर्जा (टेनिस), मेरीकोम (बोक्सिंग), आदि ने राष्ट्रीय एवं अंतरराष्ट्रीय स्तर पर खेल जगत में हमारे देश का नाम रोशन किया है।

**रक्षा एवं पुलिस सेवा के क्षेत्र में योगदान :** वर्तमान समय में महिलाएं रक्षा, सशस्त्र बल सेवा एवं पुलिस सेवा में पुरुषों के साथ कंधे से कंधा मिलकर गर्मी, सर्दी, बारिश में कार्य कर देशभक्ति का उदाहरण प्रस्तुत कर रही हैं। महिलाये रक्षा सेवा में मेजर/कर्नल, सशस्त्र बल सेवा में कमांडेंट एवं पुलिस सेवा में कॉन्स्टेबल, निरीक्षक, पुलिस अधीक्षक आदि पदों पर कार्य कर राष्ट्र के विकास में योगदान कर रही हैं। इसका सबसे बड़ा उदाहरण भारत की प्रथम महिला रक्षा सेवा में डा. पुनीता अरोडा, डा. पद्मा बंधोपाध्याय रही हैं एवं पुलिस सेवा में प्रथम महिला आई.पी.एस. अधिकारी किरण बेदी को श्रेष्ठ कार्य के लिए मेगसेसे पुरस्कार दिया गया।

**साहित्य, फिल्म एवं कला के क्षेत्र में योगदान:** साहित्य के क्षेत्र में महिलाओं का बहुत बड़ा योगदान रहा है इनमें सरोजनी नायडू, महादेवी वर्मा, अरुंधती रॉय, अनीता देसाई, शोभा डे आदि लेखिकाएं हैं। अरुंधती रॉय को उनके उपन्यास के लिए प्रसिद्ध बुकर पुरस्कार से सम्मानित भी किया गया है। इसमें ऐश्वर्या रॉय, सुस्मिता सेन, लतामंगेशकर, श्रेया घोशल, त्रिपुरारी शर्मा, शोभा नारायण, अर्पणा कौर आदि का महत्वपूर्ण योगदान है।

**वाणिज्य एवं उद्योग के क्षेत्र में योगदान :** वाणिज्य एवं उद्योग के क्षेत्र में महिलाओं ने काफी योगदान दिया है : वर्तमान में हमारे देश की वित्त मंत्री श्रीमती निर्मला सीतारमण हैं। आई.सी.आई.सी.आई. बैंक की सी.एम. डी. श्रीमती चंदा कोचर रही हैं। बहुत सी महिलाये देश में बैंको एवं प्रसिद्ध औद्योगिक कंपनियों में निदेशक की भूमिका निभा रही हैं।

**चिकित्सा एवं विज्ञान के क्षेत्र में योगदान :** चिकित्सा के क्षेत्र में डॉ. जयन्ती दत्ता, श्रीमती असीमा चटर्जी, श्रीमती मंगला नर्तिकर, कमला सोहोनी, जानकी अम्मल तथा आनंदी बाई जोशी ने काफी योगदान दिया है। अंतरिक्ष विज्ञान के क्षेत्र में कल्पना चावला, वन्दना शिवा, तथा डॉ. टेसी थॉमस ने अग्नि-5 मिसाइल के परीक्षण का प्रतिनिधित्व करके विज्ञान के क्षेत्र में योगदान देकर मिसाइल-वुमेन कहलायी।

**राजनीति के क्षेत्र में योगदान :** राजनीति के क्षेत्र में महिलाएं काफी योगदान दे रही हैं लेकिन अभी भी इनकी देश एवं राज्य की राजनीति में संख्या बहुत कम है, लेकिन ग्राम पंचायतों एवं नगरपालिकाओं में महिलाओं की संख्या में दिनोदिन वृद्धि हो रही है। महिलाओं के जीवन में बहुत सारी परेशानियां आती हैं लेकिन उससे दूर नहीं भागना चाहिए बल्कि उन समस्याओं को दूर करने का रास्ता ढूँढना चाहिए। वर्तमान समय में महिलाएं अपने घर में भी कुशलतापूर्वक कार्य करती हैं तथा राजनीति/समाज/सरकारी सेवा में भी पूरी जिम्मेदारी के साथ कार्य कर रही हैं। फिर भी राजनीतिक क्षेत्र में कार्य करते हुए महिलाओं को काफी परेशानियों का सामना करना पड़ता है जैसे कि पार्टी में, मंत्रिमंडल एवं संगठन में उचित सम्मान एवं पद नहीं मिलना, कम महत्व के कार्य देना, महिलाओं का अशिक्षित होना, महिलाओं की आर्थिक स्थिति ठीक नहीं होना, राजनीति में पुरुषों का अधिकार होना, समाज में बदनामी का डर होना आदि। फिर भी हमारे देश की महिलाये राजनीति में अपनी स्वयं की इच्छाशक्ति के साथ कार्य करती हुई आगे बढ़ रही हैं। उपरोक्त परेशानियों का सामना करते हुए हमारे देश की प्रसिद्ध राजनीतिक महिलाये राजनीति में आयी एवं राजनीतिक क्षेत्र में सफलतापूर्वक कार्य किया जैसे कि प्रथम महिला राष्ट्रपति श्रीमती प्रतिभा देवीसिंह पाटिल, प्रथम महिला प्रधानमंत्री श्रीमती इंदिरा गाँधी, प्रथम महिला लोकसभाध्यक्ष श्रीमती मीरा कुमार, प्रथम महिला राज्यपाल श्रीमती सरोजनी नायडू, प्रथम महिला उपराज्यपाल श्रीमती किरण बेदी एवं राजस्थान में प्रथम महिला विधानसभा अध्यक्ष श्रीमती सुमित्रा सिंह, प्रथम महिला मुख्यमंत्री श्रीमती वसुंधरा राजे सिंधिया, श्रीमती कमला आदि। वर्तमान में श्रीमती निर्मला सीतारमण, श्रीमती स्मृति ईरानी, श्रीमती ममता बनर्जी, श्रीमती सोनिया गाँधी, श्रीमती मेनका गाँधी, श्रीमती प्रियंका गाँधी, श्रीमती वसुंधरा राजे सिंधिया आदि महिलाये देश एवं राज्य की राजनीति में शानदार भूमिका निभा रही हैं। इनके अलावा देश में काफी महिलाये अपनी स्वयं की इच्छाशक्ति से राष्ट्र के विकास एवं राजनीति में कुशलतापूर्वक योगदान कर रही हैं।

### **महिलाओं के द्वारा राजनीति एवं समाज में सक्रीय भागेदारी के उपाय**

हमें समाज में ऐसे निम्न उपाय करने चाहिए जिससे कि महिलाये राजनीति एवं समाज में अपनी इच्छाशक्ति के साथ सक्रीय भागीदार बने :-

1. महिलाओं को ग्रेजुएशन के लेवल तक अनिवार्य रूप से मुफ्त शिक्षा प्रदान की जाये ।
2. महिलाओं को पति, परिवार एवं समाज की तरफ से पूर्ण सहयोग एवं सम्मान मिले ।
3. ग्राम पंचायतों, नगरपालिका, विधानसभा एवं लोकसभा के चुनावों में भाग लेना अनिवार्य किया जाये ।
4. आर्थिक स्तर में वृद्धि के लिए उचित रोजगार के अवसर देने के लिए प्रशिक्षण दिया जाये ।
5. राजनीति में महिलाओं को सम्मानजनक स्थान प्रदान किया जाना चाहिए ।
6. महिलाओं को पूरी सुरक्षा प्रदान की जाए ।



## निष्कर्ष

नारी ईश्वर की एक श्रेष्ठ कृति है। ये राष्ट्र के विकास में बहुत बड़ा योगदान दे सकती है। लेकिन हमें महिलाओं पर हो रहे अपराध, अत्याचार तथा भेदभाव को रोकना होगा। जिस दिन से हमारे देश का प्रत्येक आदमी एक महिला को अपनी बहन और बेटी के रूप में सम्मान देने लग जायेगा उस दिन से ये अपराध एवं अत्याचार खत्म हो जायेंगे। इसके लिये हमें लोगों के विचारों एवं सोच में बदलाव लाना होगा। इसके लिए अनिवार्य महिला शिक्षा, महिला सुरक्षा, महिलाओं की सुरक्षा के लिए प्रशिक्षण देना, महिलाओं के प्रति सम्मान की विचारधारा बनाने पर जोर, परिवार एवं समाज में सम्मान देना, राजनीति एवं समाज में उचित पद एवं समान अवसर देना होगा। तभी महिलाओं के साथ हो रहे अत्याचार एवं अपराध में कमी आयेगी तथा महिलाएँ राष्ट्र के विकास, समाज एवं राजनीति में पूरा योगदान दे पायेगी।

# Epistemological Beliefs of Prospective Teachers

Sopha. R\*

## ABSTRACT

The present study investigates the epistemological beliefs of prospective teachers based on, Sex, Educational Qualification and Optional Subject. The survey method was used to collect data from a sample of 500 students of B.Ed from different colleges of Kanyakumari and Tirunelveli Districts. Data were collected by using Epistemological Beliefs Inventory constructed and validated by the investigator. The findings of the study revealed that Sex have influence on the Epistemological Beliefs of B.Ed students.

## INTRODUCTION

Epistemological beliefs are those concerning the nature of knowledge and knowing. These beliefs actually anguish elucidation of learning tasks and comprehension. In the field of education epistemological beliefs is an important paradigm and is commonly used to foretell achievement of the students. Epistemological beliefs are considered to be a lens through which individuals interpret information, set standards and decide on an appropriate course of action. There is an increased need to distinguish the student's beliefs about knowledge that influence their behaviour and academic achievements, cognitive self-regulated learning strategies and decision making skills. Teachers can developed epistemological beliefs are able to apply the plan for instruction based on student's level. This belief is likely influence how students learn, how teachers instruct and subsequently transform students epistemological beliefs.

## NEED AND SIGNIFICANCE OF THE STUDY

Teacher education is going through an unprecedented period of change. Across the world the number and superiority of teachers are becoming key policy disquiet. This singularity upsets the comfortable industrialized nations and those in the process of developing stronger economic infrastructure. Today all teachers are facing the ongoing challenges of making their teaching more effective. Teachers must develop their skills to meet the student's educational needs during their preparation period. The teacher trainee has to put his heart and soul to develop the desired level of teaching competence within the short duration of time. The aptitude to do the right thing in the right way at the right time should be developed.

Epistemological beliefs investigate what knowledge is and how people know whether they know something. It concerns with the nature of knowledge and rationalization of beliefs. There are various skills to cultivate epistemological beliefs. These skills make us aware of our own knowledge. Epistemological beliefs are relevant to understanding educational strategies of both learners and teachers. Personal epistemological beliefs influence one's cognitive and metacognitive operations in significant way. It influences how teachers conceptualize in teaching.

Prospective teacher's epistemological beliefs influence their conceptions about education and subsequently their performance for a certain way of teaching in terms of approaches and classroom

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management. As prospective teachers are the future teachers it is essential to understand the epistemological beliefs that could facilitate educational reforms. Hence the investigator attempt to find out the epistemological beliefs of prospective teachers.

## OBJECTIVES OF THE STUDY

(i) To study the significant difference if any in the mean scores of Epistemological Beliefs of prospective teachers with respect to the background variables namely Sex, Educational Qualification and Optional Subject.

## HYPOTHESES

1. There is no significant difference in the mean scores of epistemological beliefs of male and female prospective teachers.
2. There is no significant difference in the mean scores of epistemological beliefs of graduate and post graduate prospective teachers.
3. There is no significant difference in the mean scores of epistemological beliefs of arts and science subjects prospective teachers.

## Sample

The sample for the present study consisted of 500 prospective teachers studying in different B.Ed colleges of Kanyakumari and Tirunelveli districts.

## Method

The investigator adopted survey method for the present study.

## Tool Used

Tool used for collection of data was Epistemological Beliefs Scale constructed and validated by the investigator.

## STATISTICAL TECHNIQUES USED

The descriptive statistical techniques were used such as mean, standard deviation, t-test and Pearson product moment co-efficient of correlation.

## ANALYSIS AND INTERPRETATION

**Table: 1: Comparison of epistemological beliefs based on sex**

Sex	Mean	SD	N	T	P	Remark
Male	79.63	17.12	124	2.039	0.042	Sig. at 0.05 level
Female	76.07	16.03	376			

The calculated t-value ( $t=2.039$ ,  $p < 0.05$ ) is significant at 0.05 level. This result indicates that there is significant difference between the male and female prospective teachers in their epistemological beliefs. So it can be concluded that sex has influence on the epistemological beliefs of prospective teachers.

**Table: 2: Comparison of epistemological beliefs based on educational qualification**

Educational Qualification	Mean	SD	N	t	P	Remark
Graduate	76.70	17.15	371	0.635	0.526	NS
Post graduate	77.66	13.88	129			

The calculated t-value (t=3.148) is not significant at any level of significance. This study indicates that there is no significant difference between the graduate and post graduate prospective teachers in their epistemological beliefs. So it can be concluded that educational qualification has no influence on the epistemological beliefs of prospective teachers.

**Table: 3: Comparison of epistemological beliefs based on optional subject**

Optional subject	Mean	SD	N	T	P	Remark
Arts	76.93	18.07	248	0.027	0.98	NS
Science	76.97	14.53	252			

The calculated t-value (t=0.027) is not significant at any level. This result indicates that there is no significant difference between the prospective teachers of Arts and Science subjects in their epistemological beliefs. So it can be concluded that subject of study has no influence on the epistemological beliefs of prospective teachers.

## FINDINGS

1. There exists significant difference in the mean scores of epistemological beliefs of male and female prospective teachers. This result is supported by the following findings. (t value=2.639, P=0.009 which is significant at 0.5 level).
2. There exists no significant difference in the mean scores of epistemological beliefs of graduate and post graduate prospective teachers. (t value= 0.635, P value= 0.526).
3. There exists no significant difference in the mean scores of epistemological beliefs of Arts and Science subjects prospective teachers. (t value= 0.027, P value= 0.98).

## EDUCATIONAL IMPLICATIONS

1. The study suggests the need of effective guidance programme for the development of mature epistemological beliefs among prospective teachers.
2. The epistemological beliefs depend on knowledge about knowing. Hence the teachers should help the students to develop their knowledge.
3. Encourage the students to participate in various seminars, symposiums etc. This will help to develop epistemological beliefs.
4. Teacher educators should be informed about the importance of epistemological beliefs and they should take efforts for developing students' epistemological beliefs.
5. Epistemology exists in the form of beliefs, and learning is influenced by the epistemological beliefs that individuals hold. Therefore teacher educators should develop mature beliefs among prospective teachers.

## SUGGESTIONS FOR FURTHER RESEARCH

In order to make the present study more meaningful, the investigator suggests the following areas for further study.

- The present study may be repeated for a large sample representing the whole state.
- The present study was confined only to Kanyakumari and Tirunelveli districts in Tamil Nadu. Similar studies can be conducted in other districts also.
- The present study was confined only to prospective teachers. It can be extended to higher secondary school students and college students.
- An investigation may be undertaken to find out the factors which influence the epistemological beliefs of prospective teachers.

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# Traffic Grooming Result in Optical WDM Network

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In an optical network, optical fibers are used as the main medium of communication, which are nothing but very thin glass cylinders carrying optical (light) signals. A single optical fiber has, at least theoretically, a potential bandwidth of nearly 50 terabits per second (Tbps), which is about four orders of magnitude higher than the currently achievable electronic processing speed of a few gigabits per second (Gbps) [Bandyopadhyay, 2006]. However, because of the limit of the electronic processing speed, it is unlikely that all the bandwidth of an optical fiber will be exploited by using a single high capacity optical channel or wavelength. For this reason, it is desirable to find an effective technology that can efficiently exploit the huge potential bandwidth capacity of optical fibers. The emergence of wavelength division multiplexing (WDM) technology has provided a practical solution to meeting this challenge. With WDM technology, multiple optical signals can be transmitted simultaneously and independently in different optical channels over a single fiber, each at a rate of a few gigabits per second, which significantly increases the usable bandwidth of an optical fiber [Zheng and Mouftah, 2004]. Besides the increased usable bandwidth of an optical fiber, WDM also has other advantages, such as, efficient failure handling, which means we can overcome more efficiently the data communication interruption due to any failure of communication media or the related software, data transparency, means data are more reliable and flaws free, and also reduced electronic processing cost [Bandyopadhyay, 2006]. As a result, WDM has become the technology of choice to meet the tremendous bandwidth demand in current and future networks. Optical networks using WDM technology are being considered as the potential main network infrastructure for the next-generation of telecommunications networks and the Internet [Zheng and Mouftah, 2004].

We have considered the problem of power consumption in optical mesh Network. The main power is consumed due to EOE conversion. Here we assumed that a traffic matrix ( $t$ ) is given to us where each element in this matrix represents the amount of data to be communicated between a pair of source-destination nodes with minimum granularity. At first it may seem fault

Keyao Zhu and Biswanath Mukherjee: - have investigated the traffic-grooming problem in a WDM based optical mesh topology network. They have focused on improving the throughput and the node architecture for a WDM mesh network with traffic grooming. They have discussed the problem of how to groom low speed connection requests to high capacity light paths efficiently. The mathematical formulation is presented for static traffic demands. Several provisioning algorithms, i.e. heuristics, are also proposed and their performance is compared.

Osama Awwad, Ala I. Al-Fuqaha and Ammar Rayes: - They have considered the RWA problem with traffic grooming (GRWA) in WDM optical mesh networks with sparse traffic grooming and wavelength conversion under static and dynamic light path connection requests. They showed that the blocking performance does not always improve as the traffic grooming and wavelength conversion devices are placed throughout the optical network. This implies that a network designer can reduce the network cost without affecting the network performance by carefully deploying a limited number of traffic grooming and wavelength conversion resources in the network.

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Tanmay De, Puneet Jain, Ajit Pala and Indranil Sengupta: - They have investigated the traffic grooming problem with the objective of maximizing the network throughput for wavelength routed mesh networks. They have proposed an algorithm to handle general multi-hop static traffic grooming based on genetic algorithm. The efficacy of their approach has been established through extensive simulation on different sets of traffic demands under different network topologies and compared with an efficient heuristics proposed in the literature.

Soumen Atta and Anirban Mukhopadhyay:- They have only considered the power consumption by EOE conversion in a mesh network. They have proposed a genetic algorithm to minimize the EOE conversions needed for a mesh network to satisfy all the traffic requests for a given physical topology. They have also considered the amount of wavelength wastages for their solution and they have minimized these wastages below a user given value. The results have been demonstrated on two optical mesh networks.

Ashok Kumar Pradhan and Tanmay De:- They discussed multicast traffic grooming problem using light-tree approach with static multicast connection requests. They proposed a heuristic algorithm called Saturated-Light-Tree based Multicast Traffic Grooming (SLTMTG) that solves grooming, routing and wavelength assignment problems. SLTMTG algorithm is based on grooming of multicast traffic to constrained light-trees in which traffic is groomed for better resource utilizations. This approach is used to minimize the grooming cost as well as wavelength requirement. They have proposed an approach that tries to satisfy all connection requests. The performance of proposed algorithm has compared with existing Multicast Traffic Grooming (MTG) algorithm. The performance of proposed algorithm was compared with existing Multicast Traffic Grooming (MTG) algorithm. The results were compared on several standard networks to measure cost and wavelength utilization.

Nilanjan Banerjee and Sumit Sharan:- They have formulated the Static RWA problem in optical networks as a single objective optimization problem and solve it in a novel way using an Evolutionary algorithm. A hybrid approach based on the k-shortest path for every source-destination pair was used to initialize the population. The wavelength assignment to lightpaths in fittest individuals was performed using a special graph-coloring technique. They compared the single objective results with those obtained by the first-fit algorithm. They have tested their algorithm on known optical networks like the ARPANet, EON, UKNet and USFNet. The representative results and the comparison had shown the effectiveness of their algorithm.

Yi Zhang, Massimo Tornatore, Pulak Chowdhury and Biswanath Mukherjee:- They have proposed a novel approach to save energy in IP-over-WDM networks by shutting down idle line cards and chassis of routers based on time-of-the-day network traffic variation. A method based on Mixed Integer Linear Programming (MILP) was proposed to ensure that the energy cost incurred by the IP router and optical cross-connects is minimized by their approach. They also proposed some possible approaches to minimize potential traffic disruption when the network elements were shut down.

## **TRAFFIC GROOMING IN OPTICAL NETWORKS**

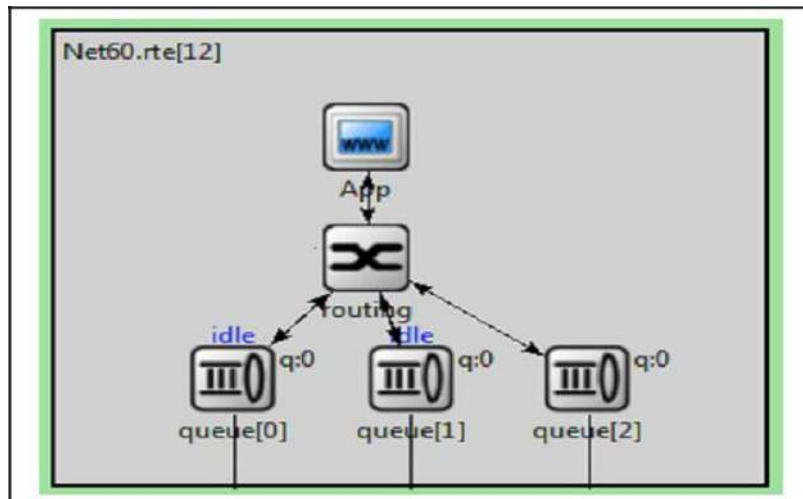
As mentioned before, the transmission capacity of a fiber in today's optical networks has increased significantly due to wavelength-division multiplexing (WDM) technology. Each light path in a WDM network carries 10 Gbps or 2.5 Gbps depending on the technology used. The network performance is now mainly limited by the processing capability of the network elements, which are mainly electronic. Moreover, individual requests for connection is typically for a much lower data communication rate, of the order of Mbps. By efficiently grooming low speed traffic streams onto high-capacity optical

channels, it is possible to minimize this electronic processing and eventually increase the network performance. Traffic Grooming in WDM can be defined as a family of techniques for combining a number of low-speed traffic streams from users so that the high capacity of each light path may be used as efficiently as possible. Traffic grooming minimizes the network cost in terms of transmitters and receivers and optical switches [Bandyopadhyay, 2006].

“Traffic grooming is composed of a rich set of problems, including network planner, topology design, and dynamic circuit provisioning” [Somani, 2006]. The traffic grooming problem based on static traffic demands is essentially an optimization problem. It can be seen as a dual problem from different perspectives. One perspective is that, for a given traffic demand, satisfy all traffic requests as well as minimize the total network cost.

The other problem is that, for given resource limitation and traffic demands, maximize network throughput, i.e., the total amount of traffic that is successfully carried by the network [Zhang and Mukherjee, 2004]. In recent years, there has been an increasing amount of research activity on the traffic grooming problem, both in academe and in industry. Researchers are realizing that traffic grooming is a practical and important problem for WDM network design and implementation.

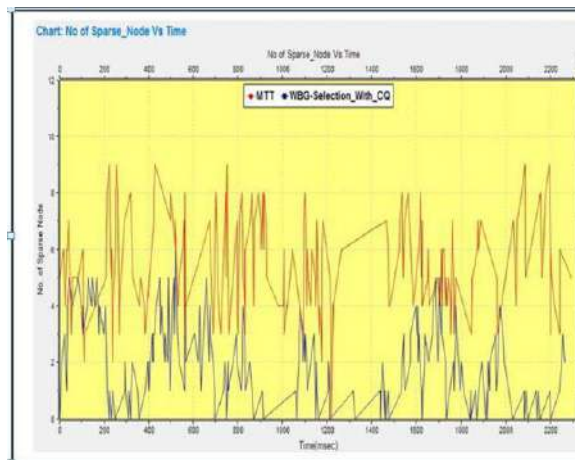
Fig. 4 shows a Node Architecture. Queues are design to handle the requests Which are arriving at the node? Router routes the request according to the shortest path to the specified destination. “App” design is used to generate the request in exponential order where it is sent to destination by router



**Node Architecture of each node**

The performance of proposed algorithm with existing few algorithms like CLPGA, MTT have been compare with parameters like Blocking probability, Network cost with Traffic Load. The proposed algorithm and MTT(Maximum Total traffic) are compared for number of sparse node selected for varying time as the traffic changes. This gives idea about how many nodes will be sparse node in the network. Based on this we have finalized number of sparse node and varying results for various parameters are achieved. The graph for number of sparse node selected for particular ongoing time has been plotted shown in Fig. 3





**No.of Sparse Node Vs Time in msec**



**Network cost Vs Traffic load**

The various algorithms are compared for the blocking probability with varying load and it is observed that the proposed method using combiner Queue gives good results.

Here BBORM (Bypass Based Optical Routing Algorithm) which make use of Buffering concept is compared with proposed algorithm and also the MTT has been considered over here.

Different approaches are used for wavelength assignment viz.

- Random wavelength assignment: A wavelength is selected randomly from the available wavelengths.
- First-fit wavelength assignment: All wavelengths are numbered. The wavelength with the lowest number is selected from the available wavelengths.
- Most-used wavelength assignment: The most-used wavelength is the wavelength that has the highest number of links in the network that use the wavelength. The most-used

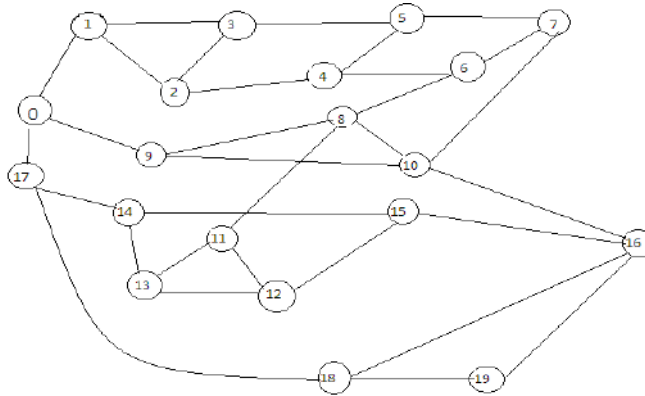
algorithm selects the most-used wavelength from the available wavelengths on the path.

In our work, we will use First-Fit technique for wavelength assignment.

Power consumption may also be reduced by some other means. The operational power can be minimized by considering typical optical backbone network. In our study we use a 20- node ARPANet [8] mesh optical back bone network as shown in the figure: 4.

We have made the following assumptions for solving the GRWA problem:

1. All links are bidirectional links.
2. Capacity of one wavelength on one fiber is constant 'c' (OC-48).
3. No. of wavelength available per fiber is limited (we will use eight wavelengths per fiber)
4. Traffic request may be through any one of speeds: OC-1, OC-3, OC-12 & OC-48.



**Nodes Mesh Network architecture**

Optical network with wavelength division multiplexing (WDM) will be an active area of research, as it can meet the huge bandwidth requirement of internet and telecommunication data traffic through WAN, MAN or LAN. In WDM, multiple wavelengths are transmitted through a single fiber and the transmission capacity can achieved as high as hundreds of terabit-per-second. Each wavelength can support a data rate of several gigabits per second (e.g. OC-192, OC-768 etc). However in practical networks, the traffic requested by an individual connection is in the range of megabit-per-second. Hence, a significant portion of transmission capacity of a wavelength channel would be wasted. For effective utilization of bandwidth, traffic grooming mechanism will be used in the network where low speed traffic streams will be multiplexed or groomed into high speed wavelength channels [1]. It minimizes the network cost by reducing the number of ADMs and the number of wavelengths used in the network. In WDM network, a light path must be established to carry traffic using a particular wavelength and a proper route between a source node and Destination node. Although this routing and wavelength assignment problem (RWA) minimizes the connection blocking, but it cannot utilize the network resources effectively. Traffic grooming with RWA can resolve the network bandwidth problem more effectively. In the beginning, the traffic grooming problems were implemented in ring networks [13-15], and later on, it has been focused on WDM mesh networks [16-17]. In WDM mesh networks, the traffic scenarios can be static, incremental or dynamic. Also the traffic grooming can be single hop traffic grooming or multi hop traffic grooming depending upon the light paths used by a connection between source and destination. The traffic grooming problem will be addressed in WDM mesh networks by several groups of researchers for different traffic conditions [18].

In our work, we will reduce the network cost, by reducing the different network equipment's used in EOE conversions to save power consumption in 20 nodes mesh network under static and dynamic traffic conditions using the Genetic algorithm.

### NETWORK COST FORMULATION

The main purpose of this work is to minimize the network costs in terms of number of transmitters and receivers require and also the number of wavelengths required.

Network cost is determined using the equation depicted in cost formulation. It is evaluated as follows:-

$$\text{Minimize } (\alpha * \sum_{i=1}^M (TR_i + RR_i) + \beta * \sum_{i=1}^M \lambda_i) \quad (1)$$

Equation 2 states that number of transmitters must be less than or equal to the number of receivers used in the network.

$$\sum_{i=1}^M TR_i \leq \sum_{i=0}^M RR_i \quad \dots\dots\dots (2)$$

Equation 3 ensures that bandwidth utilization of all multicast requests must be less than or equal to all the wavelength capacity of the network.

$$\sum_m c_m \lambda_{iD}^m \leq L_{iD}^\lambda \cdot C \quad \text{for all } i,$$

$D \in d_i$

Here,

$\alpha$ : relative cost of higher layer electronic ports

$\beta$ : relative cost of wavelength channel.

$\lambda_i$ : wavelength index starting from 1 and ending at w.

$TR_i$  : number of transmitters required at node i.

$RR_i$ : number of receivers required at node i.

M: Total number of multicast requests

$C_m$ : bandwidth request by a multicast request m.

$\lambda_{iD}^m$ : a binary variable. It is 1 if a multicast request m traverses from  $i^{th}$  node to the destination node set D in the logical layer, Otherwise 0.

$L_{iD}^\lambda$ : number of light-trees from  $i^{th}$  node to the destination node set D assigned with the wavelength  $\lambda$

C: Capacity of a wavelength channel.

$D_m = \{d_1, d_2, \dots, d_k\}$ : a set of destinations for request m, where  $|D_m| = k$ .

### COST MODEL

The cost sources of a WDM network can be mapped to the following four parameters: the link provisioning cost (Qp), the fiber cost(C/), the per channel cost (C\ ) and the cross connect cost(COTC). The link provisioning cost captures the investment required before any capacity on the link can be used. This includes digging cost, leasing cost, right of way cost, Maintenance cost etc. Multiple fibers may be laid out as part of the initial investment, some of them may be lit and dark fibers used for future upgrades.

The fiber cost,  $C_j$  is a combination of optical amplifier costs, multiplexer and DE multiplexer costs for fiber terminations, cost of dispersion compensation components. The maximum number of wavelengths per fiber is an important design parameter. Since the number of wavelengths per fiber decides the amount of dispersion components required, the laser power required and the amount of regenerators needed, the network provider should choose these design parameters appropriately.

In ultra-long haul WDM backbone network design, the goal is to let the signal travel longer (thousands of kilometers) without any regeneration. Since regenerators make up a significant part of the facility cost, reducing the number of regenerators results in a direct reduction in the total facility cost. Longer distances without regeneration typically means that the signal to noise ratio is low, as each amplifier add noise to the signal. The noise can be reduced using forward error correction (FEC) and dispersion compensation.

Hence the total fiber cost can be subdivided as follows  $C_f = A_j \cdot C_a + C_{mux} + C^{mUX} + Q_c$ , where  $C_a$ ,  $C_{mUX}$ ,  $C_{demux}$ ,  $C_{dc}$  are costs of optical amplifiers, multiplexers, DE multiplexers and dispersion compensation components respectively and  $A_j$  is the number of amplifiers along the fiber.

The per channel cost  $C_\lambda$  includes the receiver and transmitter card cost per wavelength and power equalization required per wavelength. The power equalization is included as part of the transmitter cost. Since depending on the current demand, the network provider may equip a certain number of wavelength cards out of the possible maximum, this cost depends on the number of wavelengths currently used.  $C_x = C_r - W_f + C_t - W_f$ , where  $C_t$ ,  $C_r$  are transmitter and receiver card costs and  $w_j$  is the number of wavelengths currently used in the fiber.

The number of cross-connects per node determines the switch size and hence the total facility cost. At each fiber port, the incoming wavelengths are DE multiplexed and sent to a space switch where they can be switched and sent to any output fiber port. The only constraint is that no two connections going on the same output fiber can use the same wavelength. Connections on different wavelengths, destined for the same output fiber are multiplexed and sent out. The cost of the space switch for each wavelength depends on the size of the minimum cross point switching element ( $u \times w$ ) available in the market. Let the cost of a  $2 \times 2$  cross point switching element be  $C_{oxc}$ . The number of such switching elements required for a  $(v-v)$  switch is  $\lceil \log_2 v \rceil$  (assuming the switches are implemented as a multistage interconnection network (MIN)). Hence the cost of each MIN is  $C_{oxc} \cdot \lceil \log_2 v \rceil$ . The number of incoming and outgoing ports on a fiber is decided by the maximum number of wavelengths and fibers that needs to be activated at a particular stage of network evolution. The total network facility cost is hence given by the sum of all the links and node costs.

$$\begin{aligned} \text{Total Network Facility Cost} &= \sum_l^L (m_l C_{lp} + f_l C_f + w_l C_\lambda) \\ &+ \sum_n^N (\psi \cdot C_{oxc} \cdot \frac{(o_n)}{w} \log_w(o_n)) \end{aligned}$$

Where  $m_l = 0, 1$  denotes if a link  $l$  is used or not.  $f_l, w_l$  denotes the number of fibers and wavelengths on a link  $l$  respectively.  $o_n$  denotes the number of cross-connects needed in a node, and  $i/w$  denotes the maximum number of wavelengths per fiber. The value of  $o_n$  is rounded off to the nearest higher integral power of  $w$ . In the second term of the above equation, the cost of a MIN in each node is multiplied by  $i/w$ , since there is a MIN switch for each wavelength.

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# Semi-Structured Practice of Innovation in Teaching As Perceived By Select Science Teachers of Kerala

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## ABSTRACT

Many teaching approaches have been experimented to improve student attitudes and achievement in science education. It is still significant to look into how much the teachers use and employ various strategies of teaching in their teaching-learning exercise to engage students meaningfully in the midst of the constructivist paradigm that we follow as suggested by NCF (2005) in India. This is an attempt to identify common patterns and strategies in using innovative method of science teaching of five exemplary teachers who have voluntarily sustained the implementation of an argument-based inquiry approach, and it is explored how those patterns relate to their sustained implementation. Results indicate that teachers' orientations aligned with argument-based inquiry, especially as to how students learn, are essential for their sustained implementation. Their orientations are strongly connected with two other components of PCK (i.e., Knowledge of Student Understanding and Knowledge of Instructional Strategies and Representations), which mutually interact with the sustainability of the implementation. The biggest challenge for any teacher is capturing each student's attention, and conveying ideas effectively enough to create a lasting impression. As a teacher, to tackle this challenge effectively, it should be implemented innovative ideas that make the classroom experience much more lovable for students. The innovative strategies and modes of select teachers are detailed are in this paper.

**Keywords:** Innovation, Science Teaching, Teaching Strategies

## INTRODUCTION

The purpose of education is not just making a student literate but adds rationale thinking, knowledge, ability, and self-sufficiency. When there is a willingness to change, there is hope for progress in any field. Moreover, creativity can be developed and innovation benefits both students and teachers Göl (2011). Attitudes, motivation, and interest are regarded as important determinants of the quality and depth of learning processes, student persistence, and study choice (Hidi & Renninger, 2006; Vansteenkiste, Lens, & Deci, 2006) and for the same the teachers have to be prepared. Approach is one of the factors in this regard. More than that, many other factors will also influence the affective outcomes of education in which improved teaching is inevitable (Myers & Fouts, 1992; Middleton & Spanias, 1999). Studies prove that teachers engagement with students in innovative ways and means will surely enhance their learning. In an attempt to engage students, the University of Texas introduced a design experience as one the strategies. (Wicker and Krishnaswamy, 1998).

It is visible that an array of teaching approaches has been proposed to foster positive attitudes toward science and mathematics. Although each approach has its own unique features, which could be characterized on many dimensions, a few broad categories tend to be distinguished in research

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as well as in public debate (Potvin & Hasni, 2014b; Schroeder et al., 2007). One aim of all context based curricula is that students will experience the relevance and applicability of the science content in society and in their personal life worlds (Gilbert, 2006). Many studies on context-based interventions report gains in students' attitudes to science and technology, with learning gains similar to those of conventional approaches (Bennett et al., 2007). Similarly, studies on inquiry based curricula report positive effects on attitudes as well as achievement (Furtak et al., 2012; Gibson & Chase, 2002) and it is confirmed that when teacher uses the said approach learners will be able to process the concerns with meaningful questions and alternative solutions.

Potvin and Hasni (2014) report that while engaging meaningfully with technology, students enjoy working with computers, students feel more safe to experiment and make mistakes, and learn independently. Similarly, collaborative learning ensures positive effects on students motivation, increased self-confidence and satisfaction (Lazarowitz & Hertz-Lazarowitz, 1998). Teachers are the most important agent in bringing about change and innovation in the process of teaching and learning. They tend to be strongly influenced by school reforms and initiatives defined by policies, socio political priorities, and resources at the state, federal, and national level (Han & Weiss, 2005). Many educational innovations, including context-based teaching, inquiry-based teaching, and ICT usage, have been proposed, both in science and mathematics education, to foster positive attitudes, but there is little systematic evidence about which educational approaches are effective to promote interest, attitude, and motivation (Fortus, 2014; Osborne et al., 2003).

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With respect to the teachers' understanding of the nature of science, the critique and construction of ideas should be emphasized as core practices (Ford & Forman, 2006). Acknowledging that traditional classrooms discourse rarely encourages the kind that scientists utilize when they build arguments for scientific claims. To this end, teachers should be aware of the importance of critique and construction of knowledge, and thus, create opportunities for students, not only to build explanations and justifications, but also to critique the relative value of each explanation and reasoning. Strategies in teaching matter a lot in classroom and its output in the form of real learning (Sampson & Blanchard, 2012).

Research on the effect of teaching approaches on attitudes in science and mathematics education has a long and somewhat cumbersome history. Innovative teaching refers to three categories of practice:

- Student- centered pedagogies
- Extending learning beyond the classroom to include knowledge building and problem solving in today's world
- ICT integration in ways that support learning goals, not as a goal in itself.

The latest of the ITL research is the clearest conceptual and empirical example of how technology and pedagogy can be effectively integrated. Moreover, Fullan (2011) revealed that innovative teaching does support the development of 21st century skills in students. Similarly, innovative teaching is more likely to flourish where there is teacher collaboration, active and direct engagement of teachers in professional development and a school culture that offers a common vision of innovation and consistent support for teachers. While innovation is not yet common place in most settings, seeds are being shown (Shear, Gallagher & Patel, 2011). The study on innovative ideas of teachers is of higher significance in this context.

## RESEARCH QUESTIONS

The researcher raises the following questions-

- Do the science teachers include innovative strategies in teaching?
- How does the innovation happen in teaching learning?
- Do they have significant happens in innovation?

## OBJECTIVES

- To identify the innovations followed by selected science teacher in teaching learning-planning teaching- active phase of teaching-student engagement -evaluation and preparation

## METHODOLOGY

Five teachers (as opinioned by others as innovators ) purposively selected as participants of the study, they were interviewed using its structured interview scheduled

## Tool

Interview Schedule on Innovations and Strategy used by science teaching at secondary level in Kerala, is the tool used. The following were the main concerns/ questions other than the basic details of socio demographic nature.

**Table: 1 Schedule- Description of schedule and sub-section**

Sl. No.	Phases	Questions/Items on Incorporation of Innovation	
1	Pre active phase	1. While developing the plan of teaching (Lesson plan/Teaching notes)	Yes/No, explain if yes
		2. Reading (Book/Journal/Articles)	Yes/No, explain if yes
		3. Resource identification (Media/Teaching aids)	Yes/No, explain if yes
2	Interactive phase	1. Introduction (Any innovations)	Yes/No, explain if yes
		2. Class handling technique	Yes/No, explain if yes
		3. Teaching Method-innovations	Yes/No, explain if yes
		4. Do you have any technique in active participations of students?	Yes/No, explain if yes
		5. Level and mode of motivations	Yes/No, explain if yes
		6. Activity orientations	Yes/No, explain if yes
		7. Evaluations and questioning	Yes/No, explain if yes
		8. Technology integration	Yes/No, explain if yes
		9. Assignment	Yes/No, explain if yes

Sl. No.	Phases	Questions/Items on Incorporation of Innovation	
3	Post Active Phase	1.Test	Yes/No, explain if yes
		2.Exam	Yes/No, explain if yes
		3.Remedial Class	Yes/No, explain if yes
		4.Follow up	Yes/No, explain if yes
		5.Any other	Yes/No, explain if yes

### Sample

Five higher secondary and secondary school teachers (opined as great motivators and active in experimentation) were selected for the interview.

### Results and Discussion

Results have been described based on components of the schedule.

While developing the plan of teaching 1<sup>st</sup> teacher opinion that he uses Chemistry related software and Apps chemistry for class. At the same time, 2<sup>nd</sup> teacher opinion that he uses Planning based on one hour lesson plan, Teaching notes, Internet using for collecting data. The third teacher opinion that she uses Teaching notes. The 4<sup>th</sup> teacher opinion that she uses Teaching notes, and Internet for collecting data. And, the 5<sup>th</sup> teacher opinion that she tries to know the student and to know their situation.

Regarding the innovation in reading the 1<sup>st</sup> teacher explain that he uses Science journals relating to new inventions relating to chemistry. The 2<sup>nd</sup> and 4<sup>th</sup> teacher explain that he reads based on NCRT book, prepares additional expected questions for class room using Ubuntu, and Samagra platform. The 3<sup>rd</sup> teacher explains that she uses reading strategies and will refer at least 2 books referring to related topic. Regarding the innovation in reading the 5<sup>th</sup> teacher explains that she uses different mathematics and other books.

Regarding the innovations in Resource identification 1<sup>st</sup>, 2<sup>nd</sup>, 5<sup>th</sup>, and third teachers under study use internet. Third teacher uses Bio vision, and Samagra. Regarding the second component in teaching innovation the 1<sup>st</sup> teacher uses video related to present topic, the 2<sup>nd</sup> teacher uses "experiencing and reflecting of related incident", 3<sup>rd</sup> teacher uses also analyses the situation based on present topic, and the 4<sup>th</sup> teacher uses topic related incidents as supplement. Regarding the innovation in Introduction the 5<sup>th</sup> teacher handles first fifteen minutes by discussing the socially significant matters relating to the society and discusses the mathematicians and their life stories.

Regarding the innovation in Class handling technique the 1<sup>st</sup> teacher uses the following

- *Multimedia relate topic*
- *Smart class*
- *Micro lab in class room*
- *Micro Library in class room*
- *Video conference with eminent person in class room*

Regarding the innovation in Class handling technique the 2<sup>nd</sup> teacher uses multimedia relate topic, the 4<sup>th</sup> and 5<sup>th</sup> teachers want to know the need of the student with love. In Teaching, various methods are used. The 1<sup>st</sup>, second and forth teachers uses sometimes activity mediated methods. The third teacher uses Field trips, Outdoor activity, and Interview with eminent persons. Regarding the innovation in Class handling technique, the 5<sup>th</sup> teacher has a different experience of participating with students.

- Regarding the innovation in active participations of students the 1<sup>st</sup> teacher use
  - Peer group activity relating to topic
  - Samagra (it is government initiative related to IT)
  - Resources of KITE(Kerala Infrastructure Technology for Education)
  - Developing apps and use of existing Apps.

For active participations of students, the 3<sup>rd</sup> and forth teachers use Child centered activities providing various opportunities for them. Regarding the innovation in level and mode of motivations the 1<sup>st</sup> teacher uses-

- Carrier guidance
- Analyzing student performance based on student marks
- Motivation class for higher studies
- Understanding personal gain and contribution to society through various forms of education

Regarding the innovation in activity orientations the 1<sup>st</sup> teacher uses

- Lab activities
- Micro lab and library
- Video conference
- Virtual class room

At the same time, the 2<sup>nd</sup> and 4<sup>th</sup> teachers uses test papers. The third teacher uses different mathematics techniques. The fifth one, the 5<sup>th</sup> teacher use

- Different types of math models, for teaching hazardous topics.
- **Kathakali models** used for teaching geometrical constructions (Tools and article used in Kathakali, a Kerala model classical dance)

Innovations in Technology integration, all the teachers use smart boards using ICT. All the teachers give innovative assignments as homework which will be related to their life and surroundings.

Regarding the innovation in Test the 3<sup>rd</sup> teacher uses questioning and interactive question through students as a new strategy. Regarding the innovation in Remedial Class, the 3<sup>rd</sup> teacher provides consideration to low level students with more individualistic strategies. First teacher explains that she used to conduct workshop and is participating in workshop regularly to have innovations. Similarly, the 4<sup>th</sup> teacher uses a strategy namely 'one question by all a day'

## CONCLUSION

The purpose of this study was to describe the effects of innovative teaching approaches on student and achievement in science education. With regard to the practice of teaching, recommendations can only be tentative. Several review studies have documented the effects of innovative teaching approaches on attitude and/or achievement. In educational research, the influence of affective factors on learning is being addressed from at least three largely separate research traditions: attitude, interest, and motivation research.

Several authors have attempted to bring unity by synthesizing perspectives (Brabander & Martens, 2014; Walma van der Moolen, & Asma, 2012), but thus far this has not led to a widely used common framework. It is thus concluded that so called science teachers with innovation and innovative strategies are not even using any significant innovative strategy except a few which are treated as common. It is also significant to mention the Kathakali Model and Samagra Model (A govt. initiative of providing material with the help of select trained and leading teachers of the respective subject area. It consists of various materials and resources like texts, videos, and links to the additional resources) as innovations, but at the same time more innovative student oriented strategies have to be developed and popularized among science teachers. Industry school linkage

could be a better solution for many of the lack of innovation issues. Let us be hand in hand to have an innovation oriented science teaching. Innovation is not yet common place in most settings, seeds are being shown (Shear, Gallagher & Patel, 2011).

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# Awareness Among B.ed Trainees on Health and Physical Education and Their Participation in Health and Physical Education Programmes.

Miss. Srivani Bottu\*

## ABSTRACT

This article focused on the exploring the awareness of B.Ed trainees on health and physical education and their practices such as food, safety, health, myth and misconception and hygienic in regular life. A convenience sample of 120 students with equal representation with respect to gender, medium of instruction, management and locality was selected for the study. Standardized achievement test and opinionnaire were used as tools for the study. Statistical analysis of data was done using t-test. The results revealed that there was a significant difference between achievements of students with regard to any selected variables taken for the study.

**Keywords:** awareness, trainees, health, physical and education.

Every person must possess a healthy mind to must have a healthy physique. Healthy persons could alone make a healthy society. Physical education may provide the right direction and needed actions to improve the world too. Therefore an educational system encompassing the mental, emotional, social and physical dimensions of health becomes imperative to bring about all around development in children which, intern would gave way for the development of healthy society. Therefore more research I needed to establish and define the exact relationship of physical activity, motor skills and health to academic achievements, but the evidence till today firmly establishes the fact that a close affinity exists. Therefore a kind of physical education programme is necessary to help every boy and girl in his or her quality academic achievements. This fact has been recognized throughout history, by some of the world's most profound thinkers. E.g.: Socrates stressed that poor health can contribute to gave mistakes in thinking Comenius notes, intellectual progress in conditioned at every step by bodily vigor. To attain the best results, physical exercise must accompany and condition mental training. Rousseau observed that "on enfeebled body enervates the mind" and included a rich programme of physical activities for anile. The above view and opined that learning's are motor involving neuromuscular systems and resulting in movement such as running, jumping, researching etc.

## HISTORY OF PHYSICAL EDUCATION

A brief history of physical education in the United States would kickoff in the 19<sup>th</sup> century. There was growing popularity of formal physical education programmes all across Europe. The European model by incorporating physical education in to the curriculum for primary and secondary schools. Physical education would start in just about 1820. When schools focused on gymnastics, hygiene training and care and development of the human body. 1970 that on amendment was made to the

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Federal education act that allowed women from high school and college to compete in athletic competitions. Physical education in college athletics received a major stimulus when a National collegiate athletic association was created in the early 20<sup>th</sup> century.

The modern age but recent awareness of the need for balanced curriculums particularly given the national concern over the state of obesity and children's attention towards non-physical activities such as yoga and meditation which are considered critical to helping students develop a sense of control in such a stressful age. Physical education develops the alertness of mind. Physical education provides knowledge about health and its hazards and communicable and non-communicable diseases. Through physical education human body can be developed in good proportion. The physical beauty also improves. A good sports man is a good citizen. He knows how to adjust with others. Physical education helps in developing and maintaining of good relations among human beings. It develops social traits, like co-operation, sympathy, loyalty, fraternity, courtesy and other traits of leadership. Aggressiveness can be eliminated through physical education activities. By practicing physical activities we can overcome stress, tension and sensitiveness. Physical education helps in creating discipline through games & sports. Physical education provides a number of opportunities to enhance the power of tolerance. Physical education leads to happiness efficiency and character building.

## HEALTH EDUCATION

There is a popular saying in Sanskrit "Aerogram paramo lavah", i.e., health is the greatest blessing of all. But it is a matter of regret that many of us do not know what it means. We know it only by its reverse as disease, ill health and misery. Health is not just the absence of disease. Any system of Physical education without the support of the health education can't possible accomplishes the best rules. The mutual co-ordination of physical and health education is a matter of fundamental importance in any system. Health education is concerned with promoting health as well as reducing behavior induced diseases. In other words health education is concerned with establishing or inducing changes in personal and group attitudes and behavior that promote health their living.

## HISTORICAL DEVELOPMENT OF HEALTH EDUCATION

While the history of health education as an emerging profession is only a little over one hundred years old, the concept of educating about health has been around since the dawn of humans. It does not stretch the imagination too far to be able to see how health education first took place during pre-historic era. Someone may have eaten a particular plant or herb and become ill. That person would then warn others against eating the same substance. Conversely, someone may have ingested a plant or herb that produced a desired effect. That person would then encourage others to use this substance. At the time of Alma, Ata declaration of primary health in 1978, health education was put as one of the components of PHC and it was recognized as a primary means of prevention of diseases and promotion of health.

## Importance of health education

Health education is imparted with the aim of improving the health of an individual or a group of individuals.

- May be the blessings of imparting health education. Health education enables a person to remain physically fit and in proper health.
- Health education also teaches about the emotional and mental health of the student "A healthy person is the happiest person in the world. "A healthy person can enjoy life fully.

- Health education brings positive changes in the mind of the student there are high chances that they would never get caught in the deadly habits of smoking, alcoholism, drug addiction, etc.
- Health education is important because health is a great boon to human life. Through health education, students are instructed to adopt the habit of good health and to improve the individual and public health of the country.
- **Importance of health, food and safety :-** The theme is food safety an issue very relevant to health given that, according to the world health organization, over 200 diseases are caused by unsafe food containing harmful bacteria, parasites, viruses and chemical substances. We have known for a long time that people's health is determined largely by influences outside the health sector.
- **Physical well being:-** Health and physical fitness have a vital role in the life of men from time immemorial Every individual should develop physical fitness for a happy and effective living in order to get physical times one has to involve in physical activities. Physical utility throughout the ages has been acclaimed for health and recreation it provides fun and enjoyment it also provided youthful exuberance and the elderly care physical activity and movements are as old as human existence it played numerous roles from struggle for existence to struggle for excellence.
- **Human body, development of integrated well being:-** Department of health and human development is to enrich human well- being through teaching, research and outreach Our conceptual model of well being has been used to describe global health, quality of life and overall sustainability.

## NEED AND SIGNIFICANCE OF THE STUDY

The researcher takes over the awareness among B.Ed trainees on Health and physical education. Now a day's people are give more importance to the Health and physical fitness. Health and physical education are the areas of knowledge that will ultimately drive our success engine. We are physical and spiritual beings. Our mind, body and spirit are all connected and learning how they work together and how to care for them can save us from unnecessary pain and suffering. Knowing how to take care of our body, mind and spirit will leads us down the path towards happiness, health and wealth learning health and physical education helps

- Improved physical fitness
- Skill development
- Regular, Healthful Physical Activity.
- Self discipline.
- Stress Reeducation
- Improved self confidence and self –esteem

Taking all these aspects into consideration, the researcher felt that the study is essential in the present day content. Hence it is been selected.

## Objectives of the Study

The researcher has formulated the following objectives for the present study.

- To study the awareness among B.Ed trainees towards health and physical education with reference to importance of Health, Food and safety.
- To study the awareness among B.Ed trainees towards Health and physical education with reference to importance of physical well being.
- To study the awareness among B.Ed trainees towards Health and physical education with reference to development of integral well being.

- To check whether the B.Ed trainees are conducting the engagements as prescribed Health and Physical education.
- To find out the relationship between various demographic variables on the awareness among B.Ed trainees on Health and Physical education.

## **HYPOTHESIS OF THE STUDY**

The researcher based on the objectives formulated and stated the hypothesis on follows.

- There is no significance difference among awareness of B.Ed trainees towards Health and Physical education with reference to importance of Health, food and safety.
- There is no significance difference among awareness of B.Ed trainees towards Health and physical education with reference to importance of Physicals well being.
- There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to development of intergraded well being.
- There is no significance difference among awareness of B.Ed trainees are conducting the engagement as prescribed Health and physical education.
- There is no significance relationship between various demographic variables on the awareness among B.Ed trainees on Health and Physical Education.

## **LIMITATIONS OF THE STUDY**

The Present study is carried out with the following limitations due to some constraints such as time, resources and place of studying the academic program.

- The survey conducted to study the awareness among B.Ed trainees on Health and physical Education.
- The sample consists of 120 B.Ed trainees.
- The sample is restricted only to some selected government and private B.Ed colleges of Warangal city.
- The present study is limited to only & variables that is gender, management, Locality & medium.
- The present study scope has the researcher take over the 3 dimensions on health & physical education.

## **METHODOLOGY**

### **Tool used**

The researcher developed a questionnaire to study the opinion of B.Ed teacher trainees awareness on health and physical education and their participation in health and physical education programmes. The Tool so developed consists of 18 items divided into 3 dimensions. They are Importance of health, food and safety Physical well being and Human body, development of integrated well being.

This survey gives three types of information.

Of what exist

Of what are wanted

Of how to get there.

### **Questionnaire**

Questionnaire is a list of questions related to one to one topic.

A questionnaire is probably most used data gathering devices.

It is easy to prepare and to administer. The questionnaire is a form prepared and distributed to secure responses to certain questions. It is a derive for securing answers to questions by using a form which the respondent will fill by himself two types of questionnaires are used.

They are:

01. Open ended questionnaire
02. Closed ended questionnaire.

## Development of the tool

The researcher has developed an academic achievement test for 30, sample of B.Ed teacher trainees their awareness among B.Ed relines health and physical education and their participation in health and physical education covering 3 dimensions

Which are follows

• Health, food & safety	6	activities	16M
• Physical well being	6	activities	11M
• Human body development			
Of integrated well being	6	activities	13M
		TOTAL	40 M.

Total activities of 18 for 40 marks were given to the student to elicit the awareness among B.Ed trainees regally opinion ire was prepared consisted of 18 questions. The item analysis of achievement was conducted over a sample of 3 students if consist of 12 questions (items was administered on the selected sample the score of odd item 6 and the scores of the even item 6 were quantified by using appropriate statistical techniques.

## REVIEW OF RELATED STUDIES

### Phillips (1967)

In the year 1966 has conducted as a survey of the physical activity background and present participation and the attitudes towards sports and recreational activities of resident graduate studies of Michigan state an interview questionnaire concerning previous sports participation and attitude was administered to 84 graduate students. Frequency and percentage tables were prepared for each item activity preferences were ranked and reason for and against participating were tabulated. Selected variables were tested with chi-square, but none was significant at the 0.10 level. The result indicated similar participation and attitude patterns despaired widely varying family and school background.

**ROGERS (1981):-** Examined the factors associated with reported participation in physical exercise in young adult colleges students. His subjects were 122 female students, 80 enrolled in nursing and 42 form non – nursing majors the data showed that most subject participated in regular physical exercise. One third of the students had a regular pattern of exercise established for four year or more. A desire to improve appearance was the most frequently cited motive of great importance in beginning exercise. The benefits identified as most important reasons for continuing exercise were “ helps you feel better about your self” and “ improves your physical appearance. “Those who are not satisfied with their amount of participation in exercise implicated” other demand came fist “ as the most limiting barrier.

**SODHI & NEGI (1995) :-** They conducted a study of utility of services of physical education teachers at school. They applied self made questionnaire on 53 physical education teachers were employed against 217 students. Eighty nine percent of the teachers look interest in conducting

inter- class and inter – school competition. Ninety eight percent of the teachers exposed the children to drill and other physical education activities on an average the duration of class was 35-45 minutes Fifty seven percent of the physical education teachers were teaching other subjects also.

**YUSUF (2007):-** The purpose of this paper is to examine the reasons that keep Malaysian university students from participating in sport activities during their leisure time. The instrument is designed to measure three types of constraints of sport participation.

- Structural
- Interpersonal and
- Intrapersonal

Female student experienced higher levels of structural and intrapersonal constraints than their (levels of ) male counterparts implications of the finding for sport administrators were given to overcome some constraints and increase students participation is sport activates.

## Analysis and interpretation of the data

**Table-1 shows: There is no significance difference among awareness of B.Ed trainees towers health and physical education with reference to importance of health, food and safety.**

S. No	Dimension	Medium	N	Mean	Standard deviation	t-test value	Level of significance
01.	Importance of Health, food and safety.	Male	45	9.13	2.07	1.56	Not significant
		Female	75	8.53	1.97		

## Interpretation

- The table shows that calculated mean value of B.Ed trainees males and Females scores 9.13, 8.53 respectively and standard deviation of B.Ed trainees males, females scores are 2.07, 1.97 respectively.
- The t-test value 1-56.
- That calculated t-test value is 1.56 which is less than the table value of 1.98 at 0.05 level
- Hence the formulated null hypothesis is accepted therefore it may be clouted that there is not –significant difference between the performance of B.Ed trainees male and female on “ awareness among B.Ed trainees on Health and physical education and their participation in health and physical programmes”.

**Table-2 shows: There is no significance difference among awareness of B.Ed trainees towards Health and Physical education with reference to importance of health, food and safety.**

S. No	Dimension	Medium	N	Mean	Standard deviation	t-test value	Level of significance
02.	Importance of Health, food and safety	Urban	70	8.5	1.970	1.147	Not significant
		Rural	50	8.9	2.161		

## Interpretation

- The table shows that calculated mean value of B.Ed trainees males and females scores are 8.5, 8.9 respectively.

- Standard deviation of B.Ed trainees males, females scores are 1.970, 2.161 respectively.
- The t-test value 1.147
- That calculated t-test value is 1.56 which is less than the table value of 1.147 at 0.05 levels.
- Hence the formulated null- hypothesis is accepted therefore it may be calculated that there is not – significant difference between the performance of B.Ed trainees male and female on “Awareness among B.Ed trainees on Health and Physical Education and their participation in Health and Physical Education programmes”.

**Table-3 shows: There is no significance difference among awareness of B.Ed trainees towards Health and Physical education with reference to importance of Health, food and safety.**

S.NO	Dimension	Medium	N	Mean	Standard deviation	t-test value	Level of significance
01.	Importance of Health, food and safety	Govt.	60	8.55	1.890	1.033	Not significant
		Pvt.	60	8.93	2.161		

### Interpretation

- The table shows that calculated mean value of urban and rural area B.Ed trainees scores are 8.5, 8.9 respectively.
- Standard deviation values of urban and rural area B.Ed trainees 1.890, 2.161 respectively.
- Calculated t-test value is 1.033 which is less than the table value of 1.033 at 0.05 levels.
- Hence the formulated null hypothesis is accepted.

Therefore it may be conducted that there is not significance difference between the performance of B.Ed trainees in Urban and rural area on “awareness among B.Ed trainees on Health and physical education and their participation in Health & physical education programmes”.

**Table-4 shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to importance of Health, food and safety.**

S.NO	Dimension	Medium	N	Mean	Standard deviation	t-test value	Level of significance
01.	Importance of Health, food and safety	English Medium	60	9.23	2.05	2.6	Significant
		Telugu Medium	60	8.26	1.93		

### Interpretation

- The table shows that calculated mean value of B.Ed trainees in English and telugu medium scores are 9.23, 8.26 respectively.
- Standard deviation of B.Ed trainees in English and telugu medium scores are 2.05, 1.93 respectively.
- The t-test value 2.6 which is less than the table value of 1.98 at 0.05 level.

- Hence the formulated null – hypothesis is accepted therefore it may be conducted that there is not significant difference between the Govt, private management on awareness among B.Ed trainees on health and physical education and their participation in Health & Physical education “ programmes.

**Table 5 shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to importance of physical well being.**

S NO	Dimension	Medium	N	Mean	Standard deviation	t-test Value	Level of Significance.
02.	Physical well being	Male	45	9.5	3.2	0.63	Not-significant
		Female	75	9.1	3.0		

### Interpretation

- The table shows that calculated mean value of B.Ed trainees in English and telugu medium scores are 9.23, 8.26 respectively.
- Standard deviation of B.Ed trainees in English and Telugu medium scores are 2.05, 1.93 respectively.
- The t-test value 2.6 which is less than the table value of 1.98 at 0.05 level.
- Hence the formulated null – hypothesis is accepted therefore it may be conducted that there is not significant difference between the Govt., private management on awareness among B.Ed trainees on health and physical education and their participation in Health & Physical education programmes”.

**Table 6. shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to importance of physical well being.**

S NO	Dimension	Medium	N	Mean	Standard deviation	t-test Value	Level of Significance.
02.	Physical well being	Urban	70	9.2	2.8	0.76	Not-significant
		Rural	50	9.6	3.1		

### Interpretation

- The table shows that calculated mean value of B.Ed trainees in urban and rural area 9.2, 9.6 respectively.
- Standard deviation value of B.Ed trainee teachers in urban and rural area 2.8, 3.1 respectively.
- The calculated t-test value 0.76 which is less than table value of 1.98 at 0.05 level.
- Hence the formulated null – hypothesis is accepted. Therefore it may be concluded that there is not significant difference between the performance of B.Ed trainees in urban and rural area on “Awareness among B.Ed trainees on Health and physical education and their participation in Health and physical education programmes.”

**Table 7. shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to importance of physical well being.**

S NO	Dimension	Medium	N	Mean	Standard deviation	t-test Value	Level of Significance.
02.	Physical well being	Govt.	60	9.2	2.8	0.7	Not-significant
		Private	60	9.6	3.1		

## Interpretation

- The table shows that calculated mean value of B.Ed trainees in govt. and private management 9.2, 9.6 respectively.
- Standard deviation value of B.Ed trainees in Govt. and Private management 2.8, 3.1 respectively.
- The calculated t- test value in 0.7 which is less than the table value of 1.98 at 0.05 level.
- Hence the formulated null – hypothesis is accepted therefore it may be conducted that there is not significance difference between the performance of B.Ed trainees in Govt., Private management on “ Awareness among B.Ed trainees on Health and physical education and their participation in Health and Physical education programmes.

**Table 8. shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to importance of physical well being.**

S NO	Dimension	Medium	N	Mean	Standard deviation	t-test Value	Level of Significance.
02.	Physical well being	English medium	60	9.6	3.2	0.6	Not-significant
		Telugu medium	60	9.3	2.6		

## Interpretation

- The table shows that calculated mean value of B.Ed trainees in English medium, Telugu medium 9.6, and 9.3 respectively.
- Standard deviation value of B.Ed trainees English medium and Telugu Medium 3.2, 2.6 respectively.
- The calculated t –test value 0.6 which is less than the table value 1.98 at 0.05 level.
- Hence the formulated null hypothesis is accepted therefore it may be concluded that there is not significance difference between the performance of B.Ed trainees in English and Telugu medium on “awareness among B.Ed trainees on Health and physical education and their participation in Health and physical education programmes.

**Table 9. shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to Human body development of integrated well being.**

S. No	Dimension	Gender	N	Mean	Standard deviation	t-test value	Level of significant
03.	Human body development of integrated well being.	Male	45	6.1	2.08	1.7	Not significant
		Female	75	6.8	2.3		

## Interpretation

- The table shows that calculated mean value of B.Ed trainees male and Female 6.1, 6.8 respectively.



- Standard deviation value of B.Ed trainees male and female 2.08, 2.3 respectively.
- The calculated t –test value 0.6 which is less than the table value 1.7 at 0.05 level.
- Hence the formulated null hypothesis is accepted therefore it may be concluded that there is not significance difference between the performance of B.Ed trainees in English and Telugu medium on “awareness among B.Ed trainees on Health and physical education and their participation in Health and physical education programmes.

**Table 10. shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to Human body development of integrated well being.**

S. No	Dimension	Locality	N	Mean	Standard deviation	t-test value	Level of significant
03.	Human body development of integrated well being.	Urban	70	6.8	2.3	0.6	Not significant
		Rural	50	6.5	2.4		

### Interpretation

- The table shows that calculated mean value of B.Ed trainees in urban and rural area 6.8, 6.5, respectively.
- Standard deviation value of B.Ed trainees in urban and rural area 2.3,2.4 respectively.
- The calculated t –test value 0.6 which is less than the table value 0.6 at 0.0 5 level.
- Hence the formulated null hypothesis is accepted therefore it may be concluded that there is not significance difference between the performance of B.Ed trainees in urban and rural area on “awareness among B.Ed trainees on Health and physical education and their participation in Health and physical education programmes.

**Table 11. shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to Human body development of integrated well being.**

S. No	Dimension	Management	N	Mean	Standard deviation	t-test value	Level of significant
03.	Human body development of integrated well being.	Govt.	60	6.5	2.4	0.6	Not significant
		Private	60	6.8	2.3		

### Interpretation

- The table shows that calculated mean value of B.Ed trainees in govt. and private management 6.5, 6.8, respectively.
- Standard deviation value of B.Ed trainees in Govt., Private management 2.4, 2.3, respectively.
- The calculated t- test value in 0.7 which is less than the table value of 0.6 at 0.05 levels.

- Hence the formulated null – hypothesis is accepted therefore it may be concluded that there is not significance difference between the performance of B.Ed trainees in Govt., Private management on “ Awareness among B.Ed trainees on Health and physical education and their participation in Health and Physical education programmes.

**Table-12 shows: There is no significance difference among awareness of B.Ed trainees towards health and physical education with reference to Human body development of integrated well being.**

S.No	Dimension	Medium	N	Mean	Standard deviation	t-test value	Level of significant
03.	Human body development of integrated well being.	English medium	60	6.5	2.4	0.2	Not significant
		Telugu medium	60	6.4	2.2		

### Interpretation

- The table shows that calculated mean value of B.Ed trainees in English medium, Telugu medium 6.5, and 6.4 respectively.
- Standard deviation value of B.Ed trainees English medium and Telugu Medium 2.4, 2.2 respectively.
- The calculated t –test value 0.6 which is less than the table value 0.2 at 0.0 5 level.
- Hence the formulated null hypothesis is accepted therefore it may be concluded that there is not significance difference between the performance of B.Ed trainees in English and Telugu medium on “awareness among B.Ed trainees on Health and physical education and their participation in Health and physical education programmes.

**Table-13 shows: B.Ed trainees give information about Physical Director.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
01.	Physical Director	Male	45	20	44.4	25	55.60
		Female	75	47	62.6	28	37.3
		Govt.	60	32	53.3	28	46.7
		Private	60	34	56.6	26	43.4
		Rural	50	34	68	16	32
		Urban	70	32	45.7	31	54.3

### Interpretation

- Majority of the B.Ed trainees 44.4-62.6 % of the male and females give positive opinion of have physical director.
- Majority of the B.Ed trainees give 53.3 – 56.6 % yes opinion out of the 120 sample for physical director
- Majority of the B.Ed trainees 45.7-68 % give positive opinion.

**Table -13 shows: B.Ed trainees give information about Sports and games material.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
03.	Sports and games material.	Male	45	35	77.7	10	22.3
		Female	75	49	65.3	26	34.7
		Govt.	60	48	80	32	20
		Private	60	36	60	29	40
		Rural	50	41	82	18	18
		Urban	70	39	55.7	41	44.3

### Interpretation

- Majority of the B.Ed trainees 65.3-77.7 % give positive opinion out of the 120 sample for them having physical education period.
- Majority of the B.Ed trainees 60-80 % given positive opinion of the govt. and private management.
- Most of the B.Ed trainees 55.7-82 % give positive opinion in urban and rural locality for sports and games material.

**Table-14 shows: B.Ed trainees give information about Practicing yoga regularly.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
06.	Practicing yoga regularly.	Male	45	15	33.3	30	66.7
		Female	75	20	26.6	55	73.4
		Govt.	60	11	18.3	49	81.7
		Private	60	24	40	36	60
		Rural	50	13	26	37	74
		Urban	70	22	31.4	48	68.6

### Interpretation

- Majority of the B.Ed trainees 66.7-73.4 % give negative opinion of the male and female gender for practicing yoga regularly.
- Majority of the B.Ed trainees 60-81.7 % give negative opinion of the Govt. and private management for practicing yoga regularity.
- Majority of the B.Ed trainees 68.6 – 74% give negative opinion of the rural and urban area for practicing yoga regularly.

**Table-15 shows: B.Ed trainees give information about Healthy nutritional practices and balanced diet.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
09.	Healthy nutritional practices and balanced diet	Male	45	35	77.7	10	22.30
		Female	75	58	77.3	17	22.7
		Govt.	60	50	83.30	10	18.7
		Private	60	43	71.6	17	28.4
		Rural	50	42	84	08	16
		Urban	70	51	72.8	09	27.2

### Interpretation

- Majority of the B.Ed trainees 77.3-77.7% give positive opinion of the male and female gender for healthy nutritional practices and balanced diet.
- Majority of the B.Ed trainees 71.6-83.3 % give yes opinion of the govt. and private management for healthy nutritional practices and balanced diet.

**Table-16 shows: B.Ed trainees give information about Visit hospital and interviewed the doctor for seasonal diseases.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
10.	Visit hospital and interviewed the doctor for seasonal diseases.	Male	45	18	40	27	60
		Female	75	29	38.6	46	62.4
		Govt.	60	15	25	45	75
		Private	60	32	53.3	28	47.3
		Rural	50	11	22	39	78
		Urban	70	36	51.4	34	48.6

### Interpretation

- Majority of the B.Ed trainees 60-62.4 % gives negative opinion out of the 120 sample of the male and female gender for visit hospital and interviewed the doctor for seasonal diseases.
- Most of the B.Ed trainees 47.3-75% give negative opinion of the govt. and private management for visit hospital and interviewed the doctor for seasonal diseases.
- Majority of the B.Ed trainees 48.6 – 78% gives negative opinion of the rural and urban area for visit hospital and interviewed the doctor for seasonal diseases.

**Table-17 shows: B.Ed trainees give information about Record most prevalent diseases in your surroundings.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
11.	Record most prevalent diseases in your surroundings	Male	45	15	33.3	20	66.7
		Female	75	32	42.60	43	57.4
		Govt.	60	18	30	42	70
		Private	60	32	53.3	28	46.7
		Rural	50	15	30	20	70
		Urban	70	32	45.7	38	54.3

**Interpretation**

- Majority of the B.Ed trainees 57.4-66.7 % give negative opinion out of the 120 sample of the male and female gender for record most prevalent diseases in your surroundings.
- Most of the B.Ed trainees 46.7-70 % gives negative opinion of the govt. and private management for the record most prevalent diseases in your surroundings.
- Majority of the B.Ed trainees 54.3-70 % give negative opinion of the rural and urban area for the record most prevalent diseases in your surroundings.

**Table-18 shows: B.Ed trainees give information about Suggestions for common diseases.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
12.	Suggestions for common diseases	Male	45	25	55.5	20	45.5
		Female	75	32	42.6	43	57.4
		Govt.	60	16	26.6	44	73.4
		Private	60	41	68.3	19	31.7
		Rural	50	24	48	26	52
		Urban	70	33	47.1	37	52.9

**Interpretation**

- Majority of the B.Ed trainees 45.5-57.4 % give negative opinion of the male and female gender out of the 120 sample for suggestions for common diseases.
- Most of the B.Ed trainees 31.7-73.4 % give negative opinion of the govt. and private management for suggestions for common diseases.
- Majority of the B.Ed trainees 52 % give negative opinion of the rural and urban area for suggestions for common diseases.

**Table-19 shows: B.Ed trainees give information about Conducted classes to bring awareness on adolescence and sex education.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
13	Conducted classes to bring awareness on adolescence and sex education	Male	45	32	71.1	13	28.9
		Female	75	43	57.3	32	42.7
		Govt.	60	24	40	36	60
		Private	60	51	85	09	15
		Rural	50	45	90	05	10
		Urban	70	30	42.80	40	57.2

### Interpretation

- Majority of the B.Ed trainees 57.3-71.1 % give positive opinion out of the 120 sample of the male and female gender for conducted classes to bring awareness on adolescence and sex education.
- Most of the B.Ed trainees 40-85 % give positive opinion of the govt and private sector for conducted classes to bring awareness on adolescence and sex education.
- Majority of the B.Ed trainees 42.8-90% give positive opinion of the rural and urban are for conducted classes to bring awareness on adolescence and sex education.

**Table-20 shows: B.Ed trainees give information about organized swatchbharath programme.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
14.	Organized swatch bharath programme.	Male	45	40	88.8	05	22.2
		Female	75	52	69.3	23	30.7
		Govt.	60	45	75	15	25
		Private	60	47	78.3	13	21.7
		Rural	50	42	84	08	16
		Urban	70	50	71.4	20	20.6

### Interpretation

- Majority of the B.Ed trainees 69.3-88.8% give positive opinion of the male and female gender out of the 120 sample for organized swatch bharath programme.
- Most of the B.Ed trainees 75-78.3% give positive opinion of the govt. and private management for organized swatch bharath programme.
- Majority of the B.Ed trainees 71.4-84 % give positive opinion of the rural and urban area for organized swatch bharath programme.

**Table-21 shows: B.Ed trainees give information about sports and games competition.**

S NO	ITEM	VARIABLE	NO OF SAMPLE	YES	%	NO	%
15	Sports and games competition.	Male	45	37	82.2	08	18.8
		Female	75	51	68	24	32
		Govt.	60	43	71.6	17	28.4
		Private	60	45	75	15	25
		Rural	50	33	66	27	44
		Urban	70	55	78.5	15	21.5

### Interpretation

- Majority of the B.Ed trainees 68-82.2% give positive opinion out of the 120 sample of the male and female gender for sports and games competition.
- Most of the B.Ed trainees 71.6 -75 % give positive opinion of the govt and private sector for sports and games completion.
- Majority of the B.Ed trainees 66-78.5% give positive opinion of the rural and urban area for sports and games competition.

### PROCEDURE OF DATA COLLECTION

Researcher went to educational institutions and conducted the awareness on Health and Physical education programmes. Researcher prepare a schedule to collect the data from the selected male/female, Government/Private, Urban/Rural, Telugu/English medium Educational institution. According to that researcher visited the educational institutions and explained the purpose of the study and it import once to the B.Ed trainees. The responded sheets were collected. Each question has quantified and tabulated.

### GUIDE AND EXPEARTS OPINION

According to the experts opinion I following suggestions.

### CONCLUSION WITH REGARD TO STUDENT PERCEPTION

“A sound mind in a sound body in a sound environment” every person must posses a healthy mind to have healthy mind one must have a healthy physiques healthy persons could alone make a healthy society.

This study has mostly revealed the various B.Ed teaching colleges in Warangal District.

After computed the data analysis and interpretation. The final conducted that most of the students (trainees) aware on health and physical education and their participation in health and physical education programmes.

It in clear that almost all the B.Ed trainees are aware the health and physical education, healthy food, and safety, physical well being, human body development of integrated well being. Most of the

students are having aware on Health and physical education programmers in their own. Almost all the trainees are having knowledge about the health and physical education. In view of the results of the present study the investigation laid down the following educational implications.

- Certain programmes must be arranged in the (B.Ed) Educational institutions to improve the Active mind.
- There should be reasonable work load, project work, field work on trainees, so that they may not feel over burdened
- Focus should be on improving good health habits which will help the (teachers) trainees to live with good health.
- In the educational institution should celebrate the special sports and international yoga day.
- For the physical fitness the physical director should give suggestions to the teaninees.

## **MAJOR FINDINGS OF THE STUDY**

Almost all the B.Ed trainees are able to perform the item given under Health and Physical education.

In the light of analysis and interpretation of the present study, following findings may be laid down.

- There is no significance difference among awareness of B.Ed trainees towards Health and physical education with reference to importance of Health, Food and safety in relation to gender but mean score shows slightly difference between two
- There is no significant difference among awareness of B.Ed trainees towards Health and physical education with reference to importance of physical well being in relation to stream but mean score shows slightly difference between two.
- There is no significant difference among awareness of B.Ed trainees towards health and physical education with reference to development of integrated well being give different sc mean score between rural and urban areas
- There is a significant difference among awareness of B.Ed trainees towards health and physical education with reference to importance of Health, Food and safety give different mean score between telugu and English medium
- Majority of the female B.Ed trainees expressed that they are having the physical director.
- Majority of the govt management B.Ed trainees expressed that they have sports and games material.
- Nearly 16% of the rural area B.Ed trainees expressed that they are not maintained the Healthy nutritional practices and balanced diet.
- Urban area B.Ed trainees give equal (50-50%) response that they have yoga teacher.
- Majority of the male B.Ed trainees expressed that they are conducted in sports and games competition.

## **EDUCATIONAL IMPLICATIONS**

In view of the results of the present study the investigation laid down the following educational implications.

- Certain programmes must be arranged in the (B.Ed) Educational institutions to improve the active mind.
- There should be reasonable work load, project work, field work on trainees, so that they may not over burdened.
- Focus should be on improving good health habits which will help the (teachers) trainees to live with good health.



- In the educational institution should celebrate the special sports and international yoga day.
- For the physical fitness the physical director should give suggestions to the trainees.

## SUGGESTIONS FOR FURTHER RESEARCH

After conducting the study the investigator feel that the following dimensions in this areas require for further investigation to determine at more meaningful conclusion

- The some may be conducted taking on large sample to generation the conclusions drawn.
- The similar study may be conducted to the schools in other states.
- The some study may conducted by taking other variables in to considerations.
- The study can be further done with B.Ed trainees.
- The study may be conducted in different districts of Warangal or other state.

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# Interweaving Between Sports and Psychology

Dr. Pargat Singh Garcha\*

## ABSTRACT

Sports and good health are indispensable part of our life. No charm of life without good health, so every curriculum is incomplete without sports and health education. Education is not complete without sports. The objective of the present paper is to highlight the importance of psychology in the field of sports and impact of sports on psychological development of the individual. Sports psychology is beneficial for professional and amateur athletes, coaches, coaching staff and other stakeholders related to the field of sports. We have achieved many things in the past years in the sports but still we are far behind the other sports oriented countries. We can take a large step in this race by using psychology as an integral part of every game at local or global level in a scientific way.

**Keywords:** Sports, Psychology

## INTRODUCTION

We are living in the 21<sup>st</sup> century which is called as century of information and technology. Along with many good things from 21<sup>st</sup> century we have also received many ailments like computer games, video games, unnecessary use of internet and other technological instruments which have made our children inactive in their lifestyles. Their valuable time can be diverted to physical activities instead of these activities. Participation in physical activities and sports and other physical activities can be very beneficial for children. Sports Participation can also offer the chance to achieve professional success in life. As we know that sports and good health are indispensable part of our life. No charm of life without good health, so every curriculum is incomplete without sports and health education. A game can be at the highest level (Olympics) or at local level; it needs proper training in sports and health education. With the advancement in other fields sports is also moving at the fast track. Like in other fields sports also require specific knowledge in different field of sports. Some of the common fields are sports and physiotherapy, sports and exercise physiology, sports biomechanics and kinesiology, sports nutrition, yoga for sports excellence, sports management and Journalism, use of technological advancement in training of sports and application of psychology and sociology in sports. Informal application of principles and laws of psychology are as old as sports training but their scientific application is increased in last three four decades. As we know that psychology is study of behavior. It helps us to observe, measure, modify the behavior of a subject/person. So in the field of sports behavior of a sports person is the field of study for psychology. It includes players, coaches, supporting staff etc. So, systematic study of behavior of all these stakeholders of sports and application of theories, laws and principles of psychology to modify their behavior are indispensable part of sports in modern days.

## MEANING OF SPORTS PSYCHOLOGY

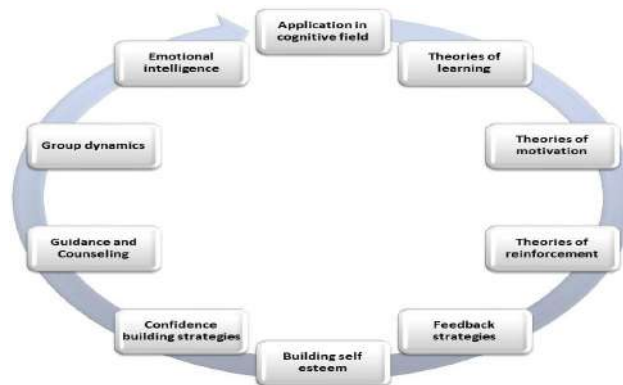
Sport psychology is a proficiency that uses psychological knowledge and skills to address optimal performance and well-being of athletes, developmental and social aspects of sports participation, and systemic issues associated with sports settings and organizations (APA,n.d).

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The above said definition by American Psychological Association clearly defines the wider areas of implication of psychology in the field of sports in few words. Sports psychology and psychology in general has implications in the field of sports and on the other hand sports participation also help in psychological development of an individual. These areas are discussed below:

## IMPLICATION OF PSYCHOLOGY IN SPORTS



## IMPACT OF SPORTS ON PSYCHOLOGICAL DEVELOPMENT OF AN INDIVIDUAL

- **Behavioral changes:** Capitalist countries are giving importance to individual games and socialist countries to the team games. Psychological impact of these games can be observed in the behavior of citizens of these countries.
- **Development of emotionally balanced personality:** Games informally teach us how to accept losses in the life happily and celebrate success with others. Sports develop emotionally balanced personalities which are required for any social set up in the world. It is rightly said that **Jo Haran Kabule Na Khedan De Magro,, Ladaku Hoyu Koi Khiladi Ni Hona.**
- **Inspiration to the youth:** Sports provide inspiration to the youth to do something for the country which can be observed from the success of movies made on the struggles, hardships of sports legend persons.
- **Change from the monotony of their daily life:** Participation in different sports provide change for monotony of daily life. It works as recreational activity too for the students. Mental health of an individual can be in good shape with the participation in different sports activities.
- **Enhance of physical and social skills:** It enhances physical as well as social skills of the participants. Playing a game keeps an individual fit and he/she interact with other team members, the competitors and learn how to react to particular situation, how to express own views and listening others.
- **Enhancement of mental Growth:** Sports activities are very helpful to enhance mental growth. As it is rightly said a sound mind lives in sound body. Sports are a major role player in enhancing children's psychological stability. Along with fun during play, everyone can have many psychological advantages.

- **Improved self-esteem and well-being:** long with the plethora of physical benefits, the mental benefits are equally as impressive. When we are physically active our body releases serotonin which directly contributes to our feelings of well-being.
- **Cultural exchange:** Games are platform for cultural exchange; sports can help in promotion, enrichment and exchange of culture. Olympics games are best example, where athletes of different nations are ambassadors, promoters of their culture. So sports really help in cultural exchange and development.

## CONCLUSION

Above points clearly explain the value of psychology in the field of sports and impact of sports on psychological development of an individual. No doubt there is growing awareness regarding importance of sports education as in Indian schools but there are many obstacles which need to be addressed at local and global level. At practice level and at policy level.

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# Emotional Intelligence and Job Satisfaction Among Higher Secondary School Teachers

Dr. Beena K\* and Sharefa Noufina K.P\*\*

## ABSTRACT

The present study is an attempt to study the relations between Emotional Intelligence and job satisfaction among higher secondary school teachers of Kasaragod District. The study intends to explore in details the influence of emotional intelligence factors with job satisfaction among teachers. This will enable us to say emotional intelligence and job satisfaction are inter related. The study was conducted by normative survey method on a representative sample of 150 higher secondary school teachers from different schools of Kasaragod District. The sampling technique employed in drawing the sample was stratified random sampling to assure accurate representation. For collecting data investigator adopted and used the two standardized tools namely Emotional intelligence scale (EIS)-(2002) developed by Anukool Hyde, Sanjyot pethe and Upinder Dhar and Teacher Job-Satisfaction Questionnaire (TJSQ) developed by Promod Kumar and D.N. Mutha, were used. The analysis of data revealed that there exists a significant relationship between emotional intelligence and job satisfaction for the total sample.

**Key Word:** Emotional intelligence, Job-Satisfaction

## INTRODUCTION

Education starts with the birth of an individual and then it goes on till the last day of the individual. Education makes an individual a real human being. Modern education is based on the psychology of the educand. The aim of education is to bring desirable changes in the learner. Education helps to develop all round personality of an individual. Such a well adjusted personality is characterized by the harmony between the needs of the individual and demands of the environment. Education equips the individual with social, moral, cultural and spiritual aspects and thus makes life progressive, cultural and civilized.

The ultimate effect of education is the product of effective teaching. For effective teaching besides knowledge and skills, teacher should have inclination towards their profession. The education system may fail to achieve the desire goal due to absence of sincere, competent and professionally aware teachers. National Policy on Education (1986) rightly states "No people can rise above the level of its teachers". As a person imbibes, interprets and disseminates the relevant items of culture and traditions of the past, he creates new knowledge, promotes innovations, critically appraises the past and its traditions and cultures, shifts the grain from the chaff, strengthens social and economic development of the nation. Sometimes best curriculum and most perfect syllabus remain ineffective due to lack of effective teachers. The teaching profession inherently entails certain wellknown self obvious and implicit obligations, commitments and expectations from its members. In order to perform his role effectively, a teacher should be aware about professional demands and obligations assigned on him.

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Further the teachers' role in influencing the future of our advancing national development is becoming increasingly important. If teachers are not satisfied with their job, we can't think about the improvement of performance of the school. If the employees are motivated, they will render their services very efficiently and effectively (Mbuu, 2003). This implies that satisfied and motivated school teachers are most likely to affect the students learning positively while the dissatisfied may have negative impacts on students' performance. Nowadays, in spite of different plans and programs, there is a general feeling that the teachers are not satisfied in their job as a result of which standard of education are gradually falling.

### **Rationale/ Significance of the study**

Advancement of educational technology enables a teacher to learn more and more to become an efficient teacher. One who is satisfied with his job is ready to acquire more for better performance. So he must be emotionally balanced also teachers can make our society a paradise, as are moulding the mind of the children, who later becomes the engineers of the society.

The investigator believes that the findings of the study will be an eye opener to help the teachers for their professional maturity. Adolescence is a very crucial period of life stage, human behavior by considering age of children learning, in higher secondary 'school, teacher who teaches to them should be clever not only by intellectually but also by emotionally. Involvement of higher secondary school teacher in his job is very important for all round development of students. We are in a time when our prospects for the future increasingly dependent on managing ourselves and handling our relationships more artfully. Grades at schools or high IQ cannot predict unerringly who will be successful and who will not be in real life. So it is necessary to find out relationship between job satisfactions of higher secondary school teachers with respective of their emotional intelligence.

Knowing about one's own emotional intelligence and job satisfaction is a self-evaluation. Though this study is not considering individual problems, then also this study will reveal some new ideas which will help the teaching, community to improve their own personality. Hence the investigator strongly felt to conduct a study on this kind.

Emotional intelligence and job satisfaction are two concepts of highly interest in the modern work environment. They serve as a Competitive edge in personal and organizational life. Emotional intelligence is the ability to manage emotions intelligently. His set of acquire skills and competencies that predict positive outcomes at home with one's family, in school, and at work. People who possess these are healthier, less depressed more productive at work, and have better Relationships. The present world demands higher level of inter relationships, mutual understanding and greater productivity at work place. A good knowledge about others emotions and an ability to manage them help a person to gain success and satisfaction in his work. Job satisfaction is also the index of the general life satisfaction of teachers and reflects well being of the person. A highly satisfied teacher tries to pick the school in its highest position. It is also an indicator of the school environment and culture of the Institution.

Teachers having the qualities like self awareness, self motivation, empathy, emotional stability and activity of managing relation can invoke inspiration to students and the teaching of them will be ideal for students and such teachers will be surely satisfied in their service. "Job satisfaction depends basically upon what an individual wants from his job and what he gets" (Morse, 1953).

Only effective teachers can materialize policies and plans of education in the classroom at the grass root level. Teacher effectiveness is understood as that which helps development of basic skills, understanding, proper work habits, desirable attitude, valid judgment and adequate personal adjustment of students. Effectiveness of teacher is considered to be associated with his self esteem

and satisfaction in work. In order to perform his role effectively a teacher should be satisfied with his teaching profession. Like any feeling of satisfaction, job satisfaction is an emotional, effective response. Many researchers proved that if a person is satisfied with his work self esteem become increased.

## EMOTIONAL ASPECT OF JOB SATISFACTION

Two raw materials viz. mood and emotions cumulate to form the affective element of job satisfaction while working. Moods tend to be long lasting with weaker state of uncertain origin. On the other hand, emotions are more and have a clear object or cause. Positive and negative emotions are significantly related to overall job satisfaction. It was found that suppression of unpleasant emotions decreases job satisfaction and the amplification of pleasant emotions increases job satisfaction. There are two types of model for understanding how emotion regulation relates to job satisfaction.

1. Emotional dissonance: - Emotional Dissonance is a state of discrepancy between public displays of emotions and internal experiences of emotions that often follows the process of emotion regulation. Emotional dissonance is associated with high emotional exhaustion, low organizational commitment and low job satisfaction.
2. Social interaction model: - Taking the social interaction perspective, workers' emotion regulation might be get responses from others during interpersonal encounters that subsequently impact their own job satisfaction. For example: the accumulation of favorable responses to display of pleasant emotions might positively affect job satisfaction. Performance of emotional labor that produces desired outcomes could increase job satisfaction.

The present study is an attempt to study the relations between Emotional Intelligence and job satisfaction among higher secondary school teachers of Kasaragod District. The study intends to explore in details the influence of emotional intelligence factors with job satisfaction among teachers. This will enable us to say whether emotional intelligence and job satisfaction are inter related.

## Studies Related to Emotional Intelligence and Job Satisfaction

**Agamani, (2018)** investigated the effect of personality, emotional intelligence and gender on job satisfaction of secondary school teachers. The study is a valuable addition to the new emerging field of emotional intelligence, personality and job satisfaction. Entire secondary school teachers working under West Bengal Board of Secondary Education are considered as population. The survey sample included 888 secondary school teachers. Job satisfaction scale, emotional intelligence inventory, both developed and standardized by the investigators and culturally adapted big five inventory were used to collect from samples. It is observed from the analysis that more than 60 percent secondary teachers are averagely satisfied. It is also observed from analysis that high emotional intelligent teacher possesses high level of satisfaction than that average as well as low level emotional intelligent teacher. Results also revealed that female teachers are more satisfied than their male counterpart.

**Aminbeidokhti et. al. (2017)** Investigated the relationship between emotional intelligence and job satisfaction among Electricity Distribution Company employees of Tehran city. The design of the study is of retrospective descriptive correlational type. In order to collect the data for the three intended variables, the researcher used the Bar-On 90-item Emotional Intelligence Inventory, Eysenck's 57-item Personality Questionnaire and Herzberg's 36-item Job Satisfaction questionnaire. 274 participants were chosen based on cluster sampling. The result of the study shows that coefficient of determination of job satisfaction through emotional intelligence and personality characteristics in a sample of male employees is ( $R^2=0/58$ ), and among females employees it is ( $R^2=0/44$ ) and generally among all employees it equals ( $R^2=0/49$ ).

## STATEMENT OF THE PROBLEM

The problem of the present study entitled as “**EMOTIONAL INTELLIGENCE AND JOB SATISFACTION AMONG HIGHER SECONDARY SCHOOL TEACHERS**”

## OBJECTIVE OF THE STUDY

- To find out the relationship between Emotional Intelligence and job satisfaction.
- To find out the Emotional Intelligence of higher secondary school teachers on the basis of their Gender and Locality of school.
- To find out the Job Satisfaction of higher secondary school teachers on the basis of their Gender and Locality of school.
- To compare Emotional Intelligence of higher secondary school teachers on the basis of their Gender and Locality of school.
- To compare Job Satisfaction of higher secondary school teachers on the basis of their Gender and Locality of school.

## HYPOTHESES OF THE STUDY

The following hypotheses were formulated for the study.

- There exist significant relationship between emotional intelligence and job satisfaction of higher secondary school teachers.
- There exist significant difference in the emotional intelligence of higher secondary school teachers on the basis of Gender and Locality of the school.
- There exists significant difference in the Job Satisfaction of higher secondary school teachers with respect to Gender and Locality of the school.

## METHODOLOGY ADOPTED

The present study was conducted by normative survey method on a representative sample of 150 higher secondary school teachers from different schools of Kasaragod District.

## STATISTICAL TECHNIQUES USED FOR THE STUDY

Measures of central tendency, measures of dispersion, Product moment correlation and T-test.

## TOOLS USED FOR THE STUDY

1. Emotional intelligence scale (EIS)-(2002) -Anukool Hyde Sanjyot pethe and Upinder Dhar.
2. Teacher Job-Satisfaction Questionnaire (TJSQ)- Promod Kumar and D.N. Mutha

## RESULT AND DISCUSSION

The detailed description of analysis done, their interpretations and findings based on the investigation were given below.

### **1. Analysis of the relationship between Emotional Intelligence and job satisfaction of higher secondary school teachers.**

This part of the analysis examines the relationship between Emotional intelligence and Job satisfaction of higher secondary school teachers for the total sample and for the relevant sub samples on the basis of gender, type of management and locality. The data and result shown in the table 1.



**Table 1: Analysis of the relationship between Emotional Intelligence and Job Satisfaction of Higher Secondary School Teachers**

Variables	No. of Samples	Mean	S.D.	r (Correlation)
Emotional Intelligence	150	80.85	5.31	0.45
Jobsatisfaction	150	79.47	6.05	

The obtained correlation between Emotional Intelligence and jobsatisfaction of higher secondary school teachers found to be positive (0.45). This shows that any increase or decrease in Emotional Intelligence will be followed by corresponding increase or decrease in job satisfaction. The correlation ship can verbally be described as substantial or marked relationship.

### 2. Comparison of Emotional Intelligence of higher secondary school teachers on basis of gender

The comparison of the mean score of Emotional Intelligence of higher secondary school teachers male and female was done by testing the significance of mean difference for the two groups. The data and result is show in the table 2.

**Table 2: Data and result of test significance of difference in mean scores of Emotional Intelligence of higher secondary school teachers with respect to gender.**

Sex	N	Mean	S.D	C.R
Male	75	80.87	5.32	0.058
Female	75	80.83	5.34	

The obtained critical ratio was found to be 0.058 which is in the acceptance region at 0.05 level of significance. So the hypothesis is accepted and hence there exist no significance difference between male and female in the Emotional Intelligence.

### 3. Comparison of Emotional Intelligence of higher secondary school teachers on the basis of locality

The caparison of the mean score of Emotional Intelligence of higher secondary school teachers on the basis of locality was done by testing the significance of mean difference for the two groups. The data result in shown in the table 3.

**Table 3: Data and result of the test of significance for difference between mean of the variable Emotional Intelligence of the Rural and Urban higher secondary school teachers**

Locality	N	Mean	S.D	C.R
Rural	75	80.93	5.36	0.194
Urban	75	80.8	5.3	

The obtained critical ratio was found to be 0.194 which is in the acceptance region at 0.05 level of significance and hence the hypothesis is accepted. So there exists no significant difference between Rural and Urban higher secondary school teachers in their Emotional Intelligence.

### 4. Comparison of Job Satisfaction of higher secondary school teachers on the basis of gender

The comparison of the mean score of Job Satisfaction of higher secondary school teachers male and female was done by testing the significance of mean difference for the two group. The data and result is show in the table 4.

**Table 4: Data and result of test significance of difference in mean scores of Job Satisfaction of higher secondary school teachers with respect to gender**

Sex	N	Mean	S.D	C.R
Male	75	80.83	6.50	2.58
Female	75	79.88	5.68	

The obtained critical ratio was found to be 2.58 which is in the rejected region at 0.05 level of significance. So the hypothesis is rejected and hence there exist significance difference between male and female in their Job Satisfaction.

#### **5. Comparison of Job Satisfaction of higher secondary school teachers on the basis of locality**

The comparison of the mean score of Job Satisfaction of higher secondary school teachers on the basis of locality was done by testing the significance of mean difference for the two groups. Statistical data result of the test of s ignificance for difference between mean of the variable Job Satisfaction of the Rural and Urban high school teachers. The data result is shown in the table 5.

**Table 5: Data and result of test significance of difference in mean scores of Job Satisfaction of higher secondary school teachers with respect to locality**

Locality	N	Mean	S.D	C.R
Rural	75	78.43	6.45	1.07
Urban	75	79.80	5.71	

The obtained critical ratio was found to be 1.07 which is in to acceptance region at 0.05 level of significance and hence the hypothesis accepted. So there exists no significant difference between Rural and Urban higher secondary school teachers in their Job Satisfaction. The data result is shown in the table 5.

## **SUMMARY OF FINDINGS**

Analysis of the relationship between emotional intelligence and job satisfaction of higher secondary school teachers with respect to gender and locality.

### **1. With respect to total sample**

The correlation between emotional intelligence and job satisfaction is 0.45 for the data sample, which is positive and statistically significant at 0.05 levels. This means that there exists a significant relationship between emotional intelligence and job satisfaction for the total sample. This shows that any increase or decrease in emotional intelligence will be followed by corresponding increase or decrease in job satisfaction.

### **2. With Respect to Locality**

The obtained critical ratio was found to be 0.194 for the total sample which is in the acceptance region at, 0.05 level of significant. This means that there exists no significant difference between rural and urban higher secondary school teachers in their emotional intelligence.

The statistical data results of the test of the significant found to be 1.07 which is in the acceptance region at 0.05 level of significant. This means that there exists no significant difference between rural and urban higher secondary school teachers in their job satisfaction.

### **3. With Respect to Gender**

The obtained critical ratio was found to be 0.058 which is in the acceptance region at 0.05 level of significant. This means that there exists no significant difference between male and female in their Emotional Intelligence. Whereas, in the case of job satisfaction, the obtained critical ratio was 2.58 which is in the rejected region at 0.05 level of significant. This means that there exists significant relationship between male and female in their job satisfaction.

#### **1. Conclusion based on the Comparison of Emotional Intelligence And Job Satisfaction With Respect To Total Sample**

The Emotional Intelligence and Job Satisfaction are closely related. Emotional intelligence may definitely affect the job satisfaction of higher secondary school teachers.

#### **2. Conclusion based on the Comparison of Emotional Intelligence and Job Satisfaction on the Basis of Locality.**

Rural and urban teachers do not differ in their emotional intelligence

Rural and urban teachers do not differ in their job satisfaction.

#### **3. Conclusion based on the Comparison of Emotional Intelligence and Job Satisfaction on the Basis of Gender**

The major findings were revealed through the comparison.

The male and female teachers do not differ significantly in their emotional intelligence. Whereas male and female higher secondary teachers have significance difference in their job satisfaction.

The study is the relationship of emotional intelligence and job satisfaction of higher secondary school teachers. The emotional intelligence have no significant difference among higher secondary school teachers on the basis of gender and locality. While considering job satisfaction of higher secondary school teachers, it has significant difference in them on the basis of gender.. While considering the gender differences the male teachers are more satisfied in their job than that of female. While considering the locality there is no significant difference in the emotional intelligence and job satisfaction of higher secondary school teachers.

## **EDUCATIONAL IMPLECATION OF THE STUDY**

Teachers should have a very crucial role for the upliftment of the students. It is universally accepted that the quality of education depends on the quality of teachers. Besides provides teaching and guidance, teachers may have to understand emotional, social and adult problem of their students. Teacher who is satisfied in teaching job can handle this entire problem with ease. Then only we can say that, that teacher is an emotionally stabled teacher. So,teacher effectiveness programmes should be in corporate in teacher education for effective teaching, Education policy makers should try to include life skill programmes, yoga etc in teacher education for the development of emotional intelligence, Knowledge updating should be given through the in-service training for the job satisfaction of teachers. Emotions are specific responses to specific events, in that sense emotions are relatively intense. Developments of emotions in human beings are contributed to the process of natural growth and development. Also the developement of emotional behavior is learned or acquired through experience.

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# Importance of Information Communication & Technology in Higher Education

Dr. Sucheta Y. Naik\*

## ABSTRACT

Higher Education is very important to achieve sustainable growth and development of the country. Higher Education is necessary for long term economic growth and development of human resource which can take responsibility for social, economic and scientific development of the nation. Presently there is a need to educate large number of young population to be educated for the betterment of the nation. The Government has given the required thrust to the higher education sector by initiating various plans and committees. In the last two decades we have seen tremendous growth in higher education system. It aims at providing qualitative education. The advancement in the Information and Communication technology (ICT) has led to rapid advancement in the way information is passed and knowledge is developed.

## OBJECTIVES OF THE STUDY

1. To examine the present challenges of higher education system.
2. To know the concept of ICT
3. To find out the role of ICTs in higher education and the areas in which it can be integrated.
4. To understand the challenges in expanding the role of ICTs for future development in higher education working population

The knowledge of ICT has become a necessity to face present technological society. To drive our economy at a faster speed we need skilled and knowledgeable people. ICT in education will increase access to learning opportunities. It will help to enhance the quality of education with advanced teaching methods, improve learning outcomes, and enable reforms in education system.

**Key words:** Higher education, Information Communication and Technology, quality education.

## INTRODUCTION

Higher Education is very important to achieve sustainable growth and development of the country. It is necessary for long term economic growth and development of human resource which can take responsibility for social, economic and technological development of the nation. Presently there is a need to educate large number of young population for the betterment of the nation. The Government has given the required thrust to the higher education sector by initiating various plans and committees

Higher education system has grown tremendously in the last two decades to meet the demand of quality education for all. In order to increase the access to higher education and improving its reach to the remotest parts of the country, contribution of open and distance learning facilities is increasing

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at a faster speed. This aspect has further gained speed due to swift advancements in Information and Communication Technology (ICT). Demand for skilled and competitive labour is ever increasing in the present globalized society. In addition, it is entering to lifelong learning aspirations at affordable cost. Last few years we have observed the inclusion of developments in ICTs in higher education system i.e. flexible and dynamic so as to holistically integrate the technology in the management and learning process.

## Objectives of the study

1. To examine the present challenges of higher education system.
2. To understand the concept of ICT
3. To find out the role of ICTs in higher education and the areas in which it can be integrated.

## Methodology

This study is based on secondary data collected from research articles, journals, and internet.

### I Challenges of Higher Education System

The quality of higher education becomes increasingly important, to compete in a globalised economy. The present system of higher education does not serve the purpose for which it has been started. Indian Higher education face some basic problems. These include inadequate infrastructure and facilities, large vacancies in faculty positions, low student enrolment rate, outdated teaching methods, declining research standards, unmotivated students, overcrowded classrooms etc. Besides deteriorating standards, there is reported exploitation of students by many private providers. Indian Higher Education also face problem from many private and the international universities, which are grooming without proper method of quality and standard. Inadequate funding to meet the demands of various novel innovative programmes, developing a purposeful inter-face between the universities, National Research Laboratories, industries, government and society also are some more challenges.

The curriculum of some of the universities is obsolete and do not equip students with the necessary skills to make them eligible for employment. Unfortunately, there is a lack of technical knowledge in the courses of education. It is also observed that higher education is not affordable to all the deserving students.

To face the challenges of 21st century, our education system should adopt certain benchmarking techniques, with the desired quality and standards which are essentials for transforming the younger workforce into productive ones. To address these issues, we have to think of strengthening the curriculum by adding latest technology.

### II Concept of ICT

Information Communication and Technology refers to all equipments, application and services that involve communication. Computers, laptops, software, cell phones, television, radio, satellite system are all the parts of ICT. The ever changing field of technology has made the world a smaller place, as information is easily and rapidly exchanged through devices of telecommunications. The internet has proved a huge advancement in the ICT community. Videoconferencing and distance learning allow people thousands of miles apart to speak together as if they were in the same room. ICT involves more than just sharing of information, it also include the quest to improve communication throughout the world, especially to more underserved areas of the globe.

## Need of ICT based Higher Education

To emerge as knowledge super power of the world in the shortest possible time it is imperative to convert our demographic advantage into knowledge powerhouse by nurturing our working population

as knowledge enabled working population. ICT in education policies will tackle teacher competencies, learning materials, ICT equipments, student and teacher motivation, as well as the linkages to other areas of national policy and socio economic developments. Education system in India are under increasing pressure to use the ICTs to teach students the knowledge and skills they need in the 21<sup>st</sup> century. With the emerging new technologies, the teaching profession is evolving from an emphasis on teacher centred, lecture based instruction to student centred, interactive learning environments. For this it is essential that teachers are able to effectively use these new tools for learning.

**III Role of ICT in Education:** There are four areas of education namely, teaching, Learning, curriculum and educational programme. ICT has been added essentially in the 21<sup>st</sup> century as a fifth potent area of education. According to the Revised draft of National Policy, ICTs can be deployed for realizing the goals of teaching, learning, enhancing access to and reach of resources, building of capacities, as well as management of the educational system. ICT makes education productive, gives instruction more powerful and scientific way, extends educational opportunities to the masses and creates a new learning environment and information rich society.

ICT has the potential to remove the barriers that are causing the problems of low rate of education in the country. It can be used as tool to overcome the issues of cost, less number of teachers, and poor quality of education as well as to overcome the time and distance barriers. The various kinds of ICT products help to transform the traditional teacher –centred classroom into a learner centred, interactive knowledge environment.

ICT brings the outside world into the classroom teaching learning process, makes the things more realistic and thus helps the learner to understand the concept in a better manner. ICT can improve the quality of higher education by promoting experimentation, researchers and innovation, adopting the new strategies in the teaching learning process and integrating the new information with the best practices.

ICT has also become a significant tool in the field of research. It stimulates the learner to acquire quality research through teamwork, time management, self management adaptability, analytical thinking, global consciousness, basic communication, problem solving abilities.

ICT is the most vital medium in providing distance education in a very effective way. It provides online delivery of courses, online assessment and online design courses to a large number of learners at a time. The ICT based system like digital libraries, online courses, audio conferencing and teleconferencing contribute significantly to the area of e learning and have opened a new era in the area of e learning. The advantages of ICT in education can be summarised as below.

1. ICT helps increase the access to education.
2. It improves the quality of higher education by developing new ways of interaction in teaching learning process.
3. It provides specialized tools for visual, mental or hearing imperilment so that they learn and acquire knowledge at their own pace.
4. It provides equal opportunities to the large number of learners to obtain education and information.
5. It provides support to all institutions in sharing educational/learning experiences with the different schools throughout the country.
6. It provides course materials in different languages simultaneously to the learners related to different languages speaking groups.
7. It enables the distance education system to be more effective.
8. It promotes technology literacy to every citizen and especially to younger learners.
9. It provides quality materials to the learners irrespective of their geographical locations.
10. It provides opportunities for lifelong education.
11. It enhances teacher's quality both in terms of teaching and research.

**IV. ICT in the Teaching learning:**

ICT contributes significantly in the classroom teaching learning process as it helps the teacher to make this process in more dynamic way. ICT also renew the learners enthusiasm because it develops the ability of self learning and individual interaction.

The benefits of ICT in the Teaching learning are as below:

1. It provides motivation to learners.
2. Learners get different information correctly and also quickly.
3. Through various products of ICT, learning experiences can be more effective.
4. Learners can learn and work at their own pace just with little guidance from the teachers
5. ICT provides a wide variety of tools to demonstrate learning suitable for different types of learner in the class room.
6. ICT can help the teachers to evaluate the learners progress and proficiency in certain skills.
7. The learners can interact with the teachers, peers and experts on various issues outside the classroom
8. ICT enhances the learning experiences of the learners to prepare them to use new technologies and to help them to develop the essential skills to participate in the sophisticated technological world.

ICTs are very powerful tool for diffusing knowledge and information. ICT can play enormous role for improving access and equity in education sector in general and higher education sector in particular. The demand for higher education is expected to rise steeply in the forthcoming years under these influences. ICT s lends them as an ideal mechanism to bridge this gap by complimenting both formal and distant education system.

**V. Importance of ICT for teachers**

1. Accessibility : facilitates easy and quick access to ICT –rich teaching resources including ICTs system and services, computing resources, online learning materials, e learning and other education centred application. Using the ICT gadgets teachers can easily represent their lecture.
2. Empowerment: empower teacher communities with ICT technologies and continuously upgrade their ICT driven teaching skills. Lecture can be done more interesting by using ICT gadgets,
3. E learning: encourages the use of e learning and adoption of its tools and technologies to facilitate widening access to learning and improving educational achievements.
4. Enabling environment: facilitate the establishment of stable, robust, secure efficient, mobile and remote access to a repository of learning resources.
5. Learning and teaching methodologies: enhance learning and teaching methodologies through the use of ICT technology and encourage education centred teaching mechanism.
6. Lifelong learning: develop a frame work for web enabled lifelong learning through continuous education and training.
7. Research and development: promote invitation culture and encourage applied research and development among communities for advance form of education and learning processes.
8. Sustainability: maintain a constant pace of development to sustain and reproduce knowledge for continuing efforts on ICTs in education to meet new demands.
9. Non teaching staff can easily store the records in computers.
10. Parents also updates their knowledge in ICT in order to update themselves.

**VI. Ways to enhance ICT skills**

1. Knowledge of internet: teacher must possess skills of accessing, and by proper use of internet and intranet and locate useful information for development of lesson plans.
2. Integration: Teacher should do proper integration and application of technology in teaching learning process.



3. Creativity enrichment: generating printed documents like students assignment, news letter etc. utilizing various application of educational soft wares.
4. Information management: managing student data, using data management tools for managing learning. Using technology to gather organise and report student performance like excel and access data base management
5. Media design: development tools to evaluate technology based students project like power point, online assignment, online exam, Google classroom etc,
6. Creating web enhanced learning environment : learning environment for teaching with the help of technology like virtual classroom, blended learning is possible by using and sharing web 2.0 tools.

Above ICT skills a teacher must possess in technology era to meet the changing needs of teaching learning.

**VII. Conclusion:** In 21<sup>st</sup> century higher education in the country is experiencing a major transformation in terms of access, equity and quality. ICT is potentially a powerful tool for extending educational opportunities and can provide remote learning resources. ICT encourages students to take responsibility for their own learning, which provides easy access and information based resources. ICT has tremendous potentialities to revolutionised the educational process. Its infusion in the teaching learning process can develop new skills and knowledge among the learners. The increasing use of ICTs has brought changes to teaching and learning at all levels of higher education systems leading to quality enhancements. Traditional forms of teaching and learning are increasingly being converted to online and virtual environments. The use of ICT in education not only improves classroom teaching learning process, but also provides the facilities of e learning. The teaching community is able to reach remote areas and learners are able to access qualitative learning environment from anywhere and at anytime. ICT enabled education will ultimately lead to the democratization of education and will help to make our dream of **Digital India- a reality**.

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## 2020: भारत की विदेश नीति के सामने वर्तमान चुनौतियां

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### सारांश

नई सरकार के लिए सबसे महत्वपूर्ण विदेश नीति की चुनौती बदलती हुई विश्व व्यवस्था के अनुकूल होगी। यहां तक कि पश्चिमी प्रभुत्व कम हो गया है, कोई भी शक्ति नहीं उभरी है जो अपने मूल विरासत को प्राप्त करने में सक्षम है। इसलिए, राज्यों के बीच विघटन और परिवर्तित संबंधों का मौजूदा चरण जारी रहने की संभावना है। यह भी स्पष्ट हो रहा है कि अमेरिका और चीन प्रतिस्पर्धा से टकराव की ओर बढ़ रहे हैं। इन दोनों देशों के साथ संबंध अधिक कठिन हो जाएंगे और भारत को एक शिविर या दूसरे में शामिल होने के लिए दबावों से जूझना होगा। इस भूराजनीतिक पृष्ठभूमि के खिलाफ, नई सरकार को एक ऐसी विदेश नीति तैयार करनी होगी जो भारत की रणनीतिक जगह का विस्तार करने के अवसर प्रदान करे, क्योंकि यह तेजी से जटिल चुनौतियों से निपटने का प्रयास करती है। इनमें से कुछ नीचे चर्चा की गई है।

किसी भी देश की विदेश नीति मुख्य रूप से कुछ सिद्धान्तों, हितों एवं उद्देश्यों का समूह होता है जिनके माध्यम से वह राज्य दूसरे राष्ट्रों के साथ संबंध स्थापित करके उन सिद्धान्तों की पूर्ति हेतु कार्यरत रहता है। इसी प्रकार प्रत्येक राज्यों की अपनी विदेश नीति होती है जिसके माध्यम से वे अन्तरराष्ट्रीय स्तर पर अपने संबंधों का निरूपण करते हैं। बदलते वैश्विक परिदृश्य में विदेश नीति का संचालन एक चुनौती बन कर उभरी है देशों की विदेश नीतियों के रणनीतिक उद्देश्य तथा भौगोलिक निर्देश अंतरराष्ट्रीय संवाद की रूपरेखा को मोटे तौर पर परिभाषित करते हैं। फिर भी विदेश नीति लगातार बदलती और दुरुस्त होती रहती है। उसे घरेलू बाध्यताओं तथा वैश्विक संपर्क की संभावनाओं एवं क्षमताओं के अनुसार और भी दुरुस्त किया जाता है ताकि उसके राष्ट्रीय हितों को तत्कालीन सरकार की धारणा के अनुसार सर्वश्रेष्ठ तरीके से साधा जा सके। भारत भी अपवाद नहीं है और गुट निरपेक्षता हो या प्रमुख शक्तियों को चुनकर उनके साथ गठबंधन करना हो, राष्ट्रीय हित के मामलों तथा विदेश नीति के मूल उद्देश्य पर आजादी के बाद से अभी तक समूचे राजनीतिक वर्ग का एकसमान मत रहा है। छोटे या लंबे समय में संभावित लाभों के मुताबिक परिवर्तन किए गए हैं। किंतु मई 2019 में प्रधानमंत्री नरेंद्र मोदी के सत्तासीन होने के बाद से विदेश नीति में विस्तार की शैली, तरीकों तथा घटकों में नाटकीय परिवर्तन हुआ है। इसके परिणामों से कुछ लोग असहमत हो सकते हैं किंतु परिवर्तन सामने दिख रहे हैं। प्रधानमंत्री नरेंद्र मोदी द्वारा सद्भावना भरी कूटनीति दिखाए जाने अथवा बहुचर्चित 'सर्जिकल स्ट्राइक' या आतंकवाद पर नोटबंदी का कथित असर होने के बावजूद पाकिस्तान ने और हमले किए हैं, यह जानते हुए भी हमारा रुख अभी तक यही रहा है।

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वर्तमान समय में विश्व के विभिन्न घटनाक्रमों ने भारतीय विदेश नीति के समक्ष कुछ कठिन चुनौतियों को प्रकट किया है। इनमें प्रमुख हैं— ईरान तेल संकट, अमेरिकी द्विपक्षीय व्यापार तथा चीन की मुखर होती नीति। इन चुनौतियों के कारण भारतीय हितों को वैश्विक स्तर पर साधने में समस्या का सामना करना पड़ रहा है। इसकी एक प्रमुख वजह अमेरिकी ट्रंप प्रशासन की नीतियाँ हैं। अमेरिकी नीतियों ने विश्व के समक्ष अनिश्चितता के माहौल को जन्म दिया है, जिससे भारत के हित भी प्रभावित हो रहे हैं। भारत के हित जहाँ एक ओर अमेरिकी नीतियों के कारण ईरान और रूस के संदर्भ में प्रभावित हो रहे हैं तो दूसरी ओर भारत—अमेरिका व्यापार पर भी इसका नकारात्मक प्रभाव पड़ा है। वहीं चीन की नीति विश्व राजनीति में अपने प्रभाव और शक्ति को बढ़ाने के उद्देश्य से परिचालित है। जो दक्षिण एशिया में भारत के लिये समस्या उत्पन्न कर रही है।

इन चुनौतियों के बावजूद भारत ने पिछले कुछ वर्षों में विदेश नीति के क्षेत्र में अपनी स्थिति को मजबूत किया है। खाड़ी देशों में भारत की स्थिति मजबूत हुई है तो वहीं चीन द्वारा भारत की वर्तमान सरकार को लेकर आशावादी रुख अपनाया गया है। चीन पहले ही भारत की डोकलाम विवाद को सुलझाने में दिखाई गई तत्परता तथा एशियाई अवसंरचना बैंक (Asian Infrastructure टंदा) में अमेरिका तथा जापान के विरोध के बावजूद शामिल होने की सराहना कर चुका है। चीन की यह रणनीति भारत के संदर्भ में एक आशावादी दृष्टिकोण को रेखांकित करती है। लेकिन क्षेत्रीय सुरक्षा के मुद्दे पर जिसमें पाकिस्तान का मुद्दा भी शामिल है, चीन की नीति में व्यापक अंतर दिखाई देता है। जो चीन के संदर्भ में भारतीय नीति के समक्ष चुनौती प्रकट करती है उपर्युक्त चुनौतियों से निपटने के लिये भारत को एक संतुलित नीति पर काम करने की आवश्यकता है, जिससे भारतीय हितों को पूर्ण किया जा सके।

गत वर्ष भारत में नई सरकार के पदार्पण के साथ ही भारतीय विदेश नीति के सन्दर्भ में कई तरह के कयास लगने लगे। प्रश्न उठने लगे कि क्या भारतीय विदेश नीति में कुछ विशेष परिवर्तन किया जाएगा जो विदेश नीति का नया मानदंड या पर्याय बन जाएगा? सरकार के समक्ष मुख्य चुनौतियाँ क्या होंगी? उन चुनौतियों का सामना करने का सरकार का तरीका क्या होगा? इन प्रश्नों के साथ यह अनुमान भी लगाया जाने लगा कि विगत वर्षों में, विदेश नीति में जो एक ठहराव आ गया था, कम से कम उसमें कुछ गति आएगी। प्रधान मंत्री नरेंद्र मोदी ने निश्चित रूप से एक बेहतरीन शुरुआत करते हुए विश्व पटल पर भारत की छवि को मजबूत किया है। हालाँकि पड़ोस की भू—राजनीतिक वास्तविकताओं और अंतराष्ट्रीय स्तर पर विश्व ताकतों की नीतियों के मद्देनजर मोदी सरकार की शुरुआती सफलता से बँधी उम्मीदों को बनाए रखना वर्ष 2020 की मुख्य चुनौती होगी।

पिछले कुछ वर्षों में विश्व पटल पर होने वाली घटनाओं पर अगर ध्यान डाला जाए तो मुख्य चुनौतियाँ स्पष्ट रूप से दिखाई देती हैं। दक्षिण एशिया, विशेषकर पाकिस्तान और अफगानिस्तान, इस वर्ष भारतीय विदेश नीति के लिए सबसे बड़ी चुनौती हैं। सरकार ने 'नेबरहुड फर्स्ट' की नीति अपनाते हुए दक्षिण एशिया में एक अच्छी शुरुआत तो की, परन्तु अपनी इच्छा को ठोस परिणामों में परिवर्तित न कर सकी। पड़ोसी देशों के सन्दर्भ में सबसे महत्वपूर्ण कदम बांग्लादेश के साथ शसीमा समझौता है। किन्तु दूसरा महत्वपूर्ण मुद्दा शतीस्ता रिवर वॉटर पर अभी तक कोई राय नहीं बन पाई है। चीनी पनडुब्बी के कोलंबो दौरे से जहाँ भारत और श्री लंका के रिश्तों में खटास आ गयी थी, वहीं नई सरकार मैत्रीपाला सीरीसेना के आगमन से दोनों देशों के बीच

संबंधों में सुधार के अवसर बन गये हैं। यह देखना रोचक होगा कि नयी सरकार कैसे इस रिश्ते को आगे ले जाती है। अनुच्छेद 370 के विदाई के बाद भारत-पाकिस्तान के संबंधों में आए ठहराव से मोदी सरकार को, चीन तथा अन्य बाहरी ताकतों के प्रभाव को संतुलित करते हुए, पाकिस्तान के साथ सकारात्मक घटनाक्रम पर सावधानी से चलना होगा। वर्तमान परिस्थिति में पाकिस्तान के साथ संबंधों में कोई बड़ी उपलब्धि दिखाई नहीं देती है परन्तु भारत को यह ध्यान रखना होगा कि पाकिस्तान के साथ उसके संबंध अफगानिस्तान पर भी प्रभाव डालेंगे। अफगानिस्तान से नाटो शक्तियों की वापसी के बाद क्षेत्रीय ताकतों ने अपना प्रभाव जमाने की कवायद शुरू कर दी है। अफगानिस्तान में अपनी पैठ प्रभावी ढंग से बनाए रखना नई सरकार के लिए एक बड़ी चुनौती होगी। दक्षिण एशिया में आतंकवाद का मुकाबला करना भी सरकार की प्राथमिकताओं में से एक होगा।

पश्चिम एशिया में होने वाली राजनीतिक उथल पुथल, धार्मिक कट्टरवाद और आतंकवाद की घटनाओं ने विश्व स्तर पर विषम परिस्थितियाँ पैदा कर दी हैं। पश्चिम एशिया में जिस तरह से इस्लामिक राज्य की घोषणा हुई है और जिस तरह विभिन्न देशों के युवा इस संगठन से जुड़ रहे हैं, यह एक चिंता का विषय है। पश्चिम एशिया में तेल से होने वाली आय से इस्लामिक राज्य को समर्थन मिलने की संभावना है जिससे धार्मिक कट्टरवाद को बढ़ावा मिलेगा। यह देखना स्वाभाविक होगा कि लीबिया, येमन, सिरिया और इराक जैसे राष्ट्र, जो विषम परिस्थितियों से गुजर रहे हैं, उनका भविष्य क्या होगा। इस्राइल और फिलिस्तीन जैसे मुद्दों को एक साथ कैसे संबोधित किया जाए। इस परिपेक्ष में भारत को यह सुनिश्चित करना होगा कि तेल का आयात बिना बाधित हुए भारत पश्चिम एशिया की समस्याओं पर क्या रुख ले सकता है। साथ ही यह भी देखना होगा कि वहाँ काम कर रहे भारतीय नागरिकों को कोई नुकसान न हो। एन डी ए सरकार को इस बात का ख्याल रखना होगा कि भारतीय संसाधनों के आतंकवादी संगठन द्वारा इस्तेमाल पर कैसे रोक लगाई जाए ताकि ऐसे आतंकवादी संगठन भारत के खिलाफ लामबंद ना हो पाएं।

भारतीय विदेश नीति के समक्ष एक महत्वपूर्ण चुनौती है चीन के साथ अपने संबंधों की दिशा निर्धारित करना। चीन की प्रसारवादी नीति और आक्रामक रवैये से विश्व स्तर पर असहजता बढ़ी है। चीन, पूर्वी चीन सागर और दक्षिणी चीन सागर को पूरी तरह से अपने प्रभाव का क्षेत्र मानता है। चीन अपने सामरिक और राष्ट्रीय हितों के लिए जो आक्रामक रवैया अपना रहा है, उसने जापान और विएतनाम जैसे देशों में असुरक्षा की भावना को जन्म दिया है। इन्हीं वजहों से अमेरिका को विएतनाम और जापान जैसे देशों के साथ संबंध स्थापित करने में आसानी हो गयी है। जापान ने अपनी शांति समर्थन करने वाले संविधान में परिवर्तन कर, खुद को चीन की चुनौती के लिए तैयार करने की ठान ली है। भारत-चीन की सीमा पर चीन के आक्रामक रवैये से भारत में भी असहजता और चिंता की स्थिति है। हालाँकि गौरतलब है कि चीन भारत जैसे बाजार को नजरअंदाज नहीं कर सकता है। भारत को यह निर्धारित करना है कि वो चीन के साथ सहयोग की नीति अपनाना चाहता है या अमेरिका के श्चीन की चुनौती रोकने के अभियान में शामिल होना चाहता है। इसी संबंध में जब चीनी राष्ट्रपति शी जिनपिंग भारत आए थे, तो प्रधान मंत्री नरेंद्र मोदी ने अपनी चिंताओं से चीनी राष्ट्रपति को अवगत कराया था। उन्होंने ये भी कहा था कि भारत चीन के संबंध में संभावनायें तो बहुत हैं, मगर चुनौतियाँ भी उतनी ही हैं। संभावनायें व्यक्त की जा रहीं हैं कि प्रधान मंत्री नरेंद्र मोदी चीन के साथ संबंध स्थापित कर सकते हैं। इस सन्दर्भ में चीन और अमेरिका के साथ संबंधों का निर्धारण भारतीय विदेश नीति के लिए एक बड़ी चुनौती होगी।

रूस और अमेरिका के साथ संबंधों में संतुलन बनाए रखना भी भारतीय विदेश नीति के लिए एक मुख्य मुद्दा होगा। अमेरिका ने भारत के शरणनीतिक साझेदार के रूप में पिछले दो वर्षों से, सबसे बड़े हथियार आपूर्तिकर्ता के रूप में रूस की जगह ले ली है। शीत युद्ध के बाद राष्ट्रीय हितों को पुनः परिभाषित करना, इसकी मुख्य वजह रही है। रूस और अमेरिका में श्युक्रेनिअन संकट को लेकर जो सामयिक गतिरोध पैदा हुआ है उससे भारत के उपर भी दबाव बढ़ा है। 24-25 फरवरी 2020, की अमेरिकी राष्ट्रपति डोनाल्ड ट्रम्प की भारत यात्रा कई मायनों में महत्वपूर्ण है। ट्रंप का भारत दौरा तब हो रहा है जब अमेरिका में इसी साल प्रेजिडेंट चुनाव होने हैं और ट्रंप दूसरे टर्म के लिए दावा ठोक रहे हैं। जीतने के लिए उन्हें अमेरिका में बसे भारतीयों के समर्थन की भी जरूरत है। पिछले साल अमेरिका में पीएम मोदी के हाउडी मोदी कार्यक्रम में शअबकी बार ट्रंप सरकार का नारा लग भी चुका है। जाहिर है कि ट्रंप अपने दौरे में इस जुड़ाव को और मजबूत करना चाहेंगे। अब तक के ट्रेंड को देखें तो अमेरिका में भारतीयों का अधिकतर वोट डेमोक्रेट्स को मिलता रहा है। वह इस बार ट्रेंड बदलना चाहेंगे। इसी को ध्यान में रखते हुए ट्रंप के लिए अहमदाबाद में हाउडी मोदी की तर्ज पर शनमस्ते ट्रंप कार्यक्रम रखा गया, पिछले 6 महीने भारत में कूटनीतिक स्तर पर उठापटक भरे रहे हैं। पहले जम्मू-कश्मीर से अनुच्छेद 370 को निष्क्रिय करने का मामला हो या बाद में आया नागरिकता संशोधन कानून, पाकिस्तान सहित कुछ देशों ने इसके अंतरराष्ट्रीयकरण की कोशिश की। अधिकतर देशों ने जहां दोनों ही मुद्दों को भारत का आंतरिक मामला बताया, वहीं ट्रंप का रुख उलझन भरा रहा। कई बार ट्रंप मध्यस्थता का प्रस्ताव दे चुके हैं। ऐसे में भारत ट्रंप के दौरे से इस मसले का स्थाई हल निकालना चाहेगा। साथ ही अगर ट्रंप पाकिस्तान नहीं जाते हैं तो ये भी बड़ा संदेश होगा। इस यात्रा से भारत और अमेरिकी संबंधों में एक नया दौर आया और 'आण्विक समझौते' में गतिरोध खत्म होने के आसार नजर आने लगे। साथ ही रक्षा सहयोग, विशेषकर रक्षा उत्पादन और रक्षा उपकरण के आयात को सुगम बनाने की कोशिश की गयी। व्यापार और पेटेंट जैसे मुद्दों पर भी सकारात्मक बहस हुई। दूसरी ओर भारतीय और रूसी नेताओं के मुलाकात, विशेषकर रूसी राष्ट्रपति पुतिन के भारत दौरे के समय, रूस को ये आश्वासन दिया गया था की रूस आगे भी भारत का हथियार आपूर्तिकर्ता बना रहेगा। वर्तमान समय में इन दोनों देशों के बीच पुनः शीत युद्ध की स्थिति बनने से भारत को यह सुनिश्चित करना होगा कि वह क्या रुख अपनाता है और इन दोनों देशों के साथ भारत के संबंध कौन सी दिशा लेते हैं? यूरोपीय देशों के साथ भारत के संबंधों को और कितनी गहराई तक ले जाया सकता है, यह भी विदेश नीति का एक मुख्य पहलू होगा। यूरोपीय देश भारतीय बाजार की ओर आकर्षित हैं, परन्तु श्मुक्त व्यापार क्षेत्र के संबंध में जो वार्ता हो रही है वो किसी निश्चित दिशा की ओर नहीं जा रही है। भारत और यूरोपीय देशों के बीच श्मुक्त व्यापार नई संभावनाओं को जन्म देगा।

विदेश नीति के मामले में भारत की सबसे बड़ी चुनौती केवल यह नहीं होगी कि अपने पड़ोसियों तथा आसियान एवं पश्चिम एशिया समेत दूरवर्ती पड़ोसियों को किस तरह संभाला जाए बल्कि विश्व की प्रमुख शक्तियों के साथ अपने संबंधों को दुरुस्त करना भी चुनौती होगी क्योंकि वे शक्तियां अपना-अपना प्रभाव जमाने के लिए होड़ करती रहती हैं तथा किसी न किसी के जरिये यह काम करना चाहती हैं जबकि इतने बड़े आकार, आर्थिक एवं सैन्य शक्ति, मानव संसाधन तथा रणनीतिक लाभ के कारण भारत ऐसी भूमिका में नहीं आ सकता। यह माना जाता है कि भारत की विकास की गति, उसकी आर्थिक नीति व सामरिक सोच

के कारण, अंतर्राष्ट्रीय स्तर पर भारत की अवहेलना नहीं की जा सकती। इसके साथ ही आर्थिक क्षेत्र में नई संभावनाओं को तलाशना और निर्यात को बढ़ावा देना भी विदेश नीति का महत्वपूर्ण कदम होगा। भारत को इस बात पर विशेष ध्यान देना होगा कि विदेशों में अपने संसाधनों को और वृहत कैसे बनाया जाए। क्षेत्रीय सहयोग संगठनों जैसे दक्षेस और आसियान में भारत को अपनी भूमिका और सशक्त बनानी होगी और सबके साथ शांति और सहयोग के साथ आगे बढ़ने का संदेश देना होगा। मूल रूप से आर्थिक समस्याएं पश्चिमी एशिया में सामरिक एवं साम्प्रदायिक उथल पुथल चीन एवं अमेरिका का परस्परनीति एवं सामरिक सोच एवं रूस की राजनीतिक एवं आर्थिक स्थिति ब्रिटेन की यूरो विकास वाले मुद्दे प्रमुखता में रहेंगे। और इस साथ अधिकतर सामरिक चर्चाओं का केन्द्रीय मुद्दा इन्हीं सब मुद्दों के आस पास होगा। भारतीय विदेश नीति को न केवल दक्षिणी एशियाई बदलाव के बाद में सोचना होगा बल्कि किस तरह प्रमुख शक्तियों के बीच सामन्जस्य या तनाव होता है उसके अनुरूप अपनी नीति का संचालन करना होगा। 2020 में दुनिया बदलेगी और विशेष रूप से प्रमुख शक्तियों के बीच नए द्विपक्षीय समीकरण बन सकते हैं, जिनका आतंकवाद के खिलाफ लड़ाई, वैश्विक अर्थव्यवस्था एवं व्यापार, अभी जारी संघर्षों या धीमे-धीमे सुलग रहे टकरावों पर प्रभाव सकारात्मक हो सकता है या नहीं हो सकता है, लेकिन होगा जरूर। भारत को प्रासंगिक बने रहने के लिए अपना रुख तय करना होगा। और उसके अनुरूप भारतीय विदेश नीति का संचालन करना होगा।

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# भारत-अमेरिका रणनीतिक साझेदारी : मोदी-ट्रम्प 2020 से शुरू होगा द्विपक्षीय संबंधों का नया युग

Dr. Wijeesh Ronit Saimon\*

अमेरिकी राष्ट्रपति डॉनल्ड ट्रंप की भारत यात्रा क्यों खास है? क्या इस दौरे का भारत-अमेरिका रिश्ते के अलावा ग्लोबल कूटनीति पर भी इसका असर होगा? किन मायनों में यह दौरा और खास हो गया है? ये सवाल तब उठे हैं जब ट्रंप का भारत दौरा तय हो चुका है और वह 24 और 25 फरवरी को भारत में होंगे। किसी अमेरिकी राष्ट्रपति का भारत दौरा जनवरी 2015 में हुआ था जब बराक ओबामा गणतंत्र दिवस पर मुख्य अतिथि बने थे। हालांकि इस साल के लिए गणतंत्र दिवस के लिए ट्रंप को न्योता भेजा गया था, लेकिन पूर्व निर्धारित कार्यक्रम का हवाला देकर उन्होंने मना कर दिया था। डॉनल्ड ट्रंप और प्रधानमंत्री नरेंद्र मोदी, दोनों ने उम्मीद जताई कि इस यात्रा से दोनों देशों के बीच रिश्ते और बेहतर होंगे।

## ट्रंप के भारत दौरे के क्या हैं मायने?

### अमेरिका में चुनाव

ट्रंप का भारत दौरा तब हो रहा है जब अमेरिका में इसी साल प्रेजिडेंट चुनाव होने हैं और ट्रंप दूसरे टर्म के लिए दावा ठोक रहे हैं। जीतने के लिए उन्हें अमेरिका में बसे भारतीयों के समर्थन की भी जरूरत है। पिछले साल अमेरिका में पीएम मोदी के हाउडी मोदी कार्यक्रम में शबकी बार ट्रंप सरकार का नारा लग भी चुका है। जाहिर है कि ट्रंप अपने दौरे में इस जुड़ाव को और मजबूत करना चाहेंगे। अब तक के ट्रेंड को देखें तो अमेरिका में भारतीयों का अधिकतर वोट डेमोक्रेट्स को मिलता रहा है। वह इस बार ट्रेंड बदलना चाहेंगे। इसी को ध्यान में रखते हुए ट्रंप के लिए अहमदाबाद में हाउडी मोदी की तर्ज पर शक्रेम छो ट्रंप कार्यक्रम रखा गया है, जिसमें एक लाख लोगों के शामिल होने की संभावना है।

### कश्मीर पर 'ट्रंप' कार्ड

पिछले 6 महीने भारत में कूटनीतिक स्तर पर उठापटक भरे रहे हैं। पहले जम्मू-कश्मीर से अनुच्छेद 370 को निष्क्रिय करने का मामला हो या बाद में आया नागरिकता संशोधन कानून, पाकिस्तान सहित कुछ देशों ने इसके अंतरराष्ट्रीयकरण की कोशिश की। अधिकतर देशों ने जहां दोनों ही मुद्दों को भारत का आंतरिक मामला बताया, वहीं ट्रंप का रुख उलझन भरा रहा। कई बार ट्रंप मध्यस्थता का प्रस्ताव दे चुके हैं। ऐसे में भारत ट्रंप के दौरे से इस मसले का स्थाई हल निकालना चाहेगा। साथ ही अगर ट्रंप पाकिस्तान नहीं जाते हैं तो ये भी बड़ा संदेश होगा।

### ट्रेड डील पर नजर, बराबरी पर होगी बात

ट्रंप के दौरे के बीच दोनों देशों के बीच ट्रेड डील पर भी मुहर लग सकती है, जो पिछले कुछ महीनों से गतिरोध के कारण आगे नहीं बढ़ सकी है। अगर यह ट्रेड डील होती है तो सुस्ती के दौर से गुजर रही

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भारतीय अर्थव्यवस्था को संजीवनी मिल सकती है। दरअसल, इस डील में अमेरिका कुछ खास रियायतों की मांग कर रहा है। भारत ने मेक इन इंडिया का हवाला देते हुए अमेरिकी आईटी कंपनियों को मनमाना डील देने से इनकार कर दिया है। इसके अलावा भारत अमेरिका से दोबारा स्पेशल स्टेटस बहाल करने की भी मांग कर रहा है। ट्रंप की यात्रा दोनों देशों के संबंधों में नया अध्याय शुरू करेगी। यह हमारे समक्ष द्विपक्षीय संबंधों के विभिन्न पहलुओं में प्रगति करने का बेहतरीन अवसर है।

चाहे वह भारत प्रशांत क्षेत्र में शांति व सुरक्षा कायम रखने की बात हो या ऊर्जा साझेदारी को और मजबूत करने की। हम एक सफल यात्रा और इससे कुछ ठोस निकलने की उम्मीद कर रहे हैं। ट्रंप की यात्रा से इतर यूएसआईएसपीएफ ने फिक्की और ओआरएफ जैसे संगठनों के साथ मिलकर 'यूएस इंडिया फोरमरू पार्टनर इन ग्रोथ' कार्यक्रम आयोजित करने की घोषणा की है। इस कार्यक्रम में अगले एक दशक में भारत और अमेरिका की आर्थिक रणनीतियों व सांस्कृतिक सहयोग पर चर्चा होगी।

भारत और अमेरिका के बीच आज रिश्ते काफी प्रगाढ़ हो चुके हैं दोनों देशों के रिश्ते लोकतंत्र की बुनियाद पर खड़े हैं, कानून के हिसाब से दोनों देशों में शासन चलता है। सीमा की सुरक्षा अमेरिका के लिए महत्वपूर्ण है और भारत के लिए भी सीमा का सुरक्षा महत्वपूर्ण है। अवैध प्रवासी एक खतरा हैं। यह राष्ट्रपति ट्रम्प का पहला भारत दौरा वह बेहतर संबंधों की उम्मीद लेकर भारत आ रहे हैं। अमेरिका के राष्ट्रपति के तौर पर यह उनका पहला भारत दौरा है। इससे पहले बतौर राष्ट्रपति बराक ओबामा 2010 और 2015 में भारत आए थे।

## भारत - अमेरिका संबंधों की शुरुआत

आधुनिक भारत और अमेरिका के बीच अंतरराष्ट्रीय संबंधों की शुरुआत अमेरिकी राष्ट्रपति हेनरी ट्रूमैन के समय 1949 में ही हो गई थी। लेकिन उस समय नेहरू की विचारधारा समाजवादी थी और अमेरिका पूंजीवादी विचारधारा को लेकर चल रहा था। परिणाम स्वरूप भारत अमेरिका सम्बन्ध मात्र एक औपचारिकता ही थे।

1954 में अमेरिका ने पाकिस्तान के साथ मिलकर एक 'सेंटो' नामक संस्था की स्थापना की, जो भारत को अच्छा नहीं लगा। इसी के चलते भारत ने सोवियत रूस के साथ रिश्ते मजबूत कर लिए।

1961 में भारत एक संस्था का सदस्य का बना जिसने शीत युद्ध से अपने आप को अलग रखने की बात कही। इसके बाद 1971 के भारत पाकिस्तान युद्ध में अमेरिका ने प्रत्यक्ष रूप से पाकिस्तान का साथ देने की कोशिश की।

जब उस युद्ध में भारत की जीत हुई, तब अमेरिका ने दक्षिणी एशिया में भारत को एक बड़ी शक्ति माना और भारत के साथ सम्बन्ध मजबूत करने की कोशिश की।

इसके बाद 1991 में सोवियत रूस अलग हुआ जिसके बाद भारत और अमेरिका के संबंध मजबूत होते गए।

इसके बाद से आज तक भारत और अमेरिका की रिश्तों में कई उतार-चढ़ाव आये हैं। 90 के दशक में जब भारत एक उभरती अर्थव्यवस्था के रूप में विकसित हो रहा था, तब अमेरिका को यह अच्छा नहीं लगा था। इसी के चलते भारत ने जब 1998 में परमाणु परिक्षण किया था, तब अमेरिका ने इसका खुले में विरोध किया था। तत्कालीन अमेरिकी राष्ट्रपति बिल क्लिंटन ने भारत से सभी रिश्तों को खत्म करने की धमकी दी थी।



लेकिन फिलहाल के सालों में दोनों देश काफी करीब आये हैं। अमेरिका को एशिया में अपना दबदबा बनाये रखने के लिए भारत की सख्त जरूरत है। उसी प्रकार भारत को व्यापार और रक्षा कारणों से अमेरिका की जरूरत है।

### शीतयुद्ध के दौरान भारत और अमेरिका संबंध

शीत युद्ध के कारण 1946 से लेकर 1989 के तक पूरी दुनिया दो गुटों में बटी रही। शीत युद्ध में एक गुट अमेरिका का था और दूसरा सोवियत संघ का। विश्व की प्रत्येक समस्या को गुटीय स्वार्थ पर देखा जाने लगा। शीत युद्ध के परिणाम स्वरूप नाटो, सीटो, सेंटो, वारसा पैक्ट जैसे कई सैन्य गुट बनकर तैयार हुए। दोनों गुट अधिक से अधिक देशों को अपने गुप में शामिल करने की होड़ में जुट गए ताकि विश्व के अधिकांश क्षेत्रों पर अपना प्रभुत्व बढ़ाया जा सके।

भारत समाजवादी विचारधारा का समर्थक था इसलिए उसका झुकाव कहीं ना कहीं अप्रत्यक्ष रूप से सोवियत संघ की तरफ था। अमेरिका को यह बात रास नहीं आ रही थी क्योंकि भारत एशिया का एक महत्वपूर्ण और बड़ा देश था। हालांकि भारत ने किसी भी गुट में शामिल ना होते हुए अलग गुट का निर्माण किया जिसे गुटनिरपेक्ष कहा गया। दुनिया के कई देशों ने मिलकर गुटनिरपेक्ष रहने का निर्णय लिया।

1971 में भारत और पाकिस्तान के बीच युद्ध के दौरान अमेरिका ने चीन के साथ मिलकर पाकिस्तान का पूरा सहयोग किया, जो कि भारत के लिए बेहद चिन्ता का विषय था। भारत ने भी 20 साल के लिए रूस से दोस्ती की और सहयोग संधि पर हस्ताक्षर किया, जो कि अमेरिका और चीन दोनों को नवारा लगा। अमेरिका पाकिस्तान का लगातार सहयोग कर रहा था। परिणाम स्वरूप भारत की मजबूरी बन गई थी कि भारत को गुटनिरपेक्ष रहते हुए भी रूस के साथ समझौता करना पड़ा।

### 1974 पोखरण परमाणु परीक्षण

1974 में भारत ने परमाणु परीक्षण कर पूरी दुनिया को चौंका दिया, क्योंकि भारत से पहले इस तरह का न्युक्लियर परमाणु परीक्षण संयुक्त राष्ट्र संघ के स्थाई सदस्यों को छोड़कर किसी ने नहीं किया था। भारत परमाणु परीक्षण के बाद दुनिया के उन ताकतवर देशों की सूची में शामिल हो गया जिसके पास परमाणु हथियार थे। तत्कालीन प्रधानमंत्री इंदिरा गांधी ने इस परमाणु परीक्षण को शांतिपूर्ण परीक्षण का नाम दिया।

भारत के परमाणु परीक्षण के बाद अमेरिका ने भारत को परमाणु सामग्री और ईंधन आपूर्ति पर रोक लगा दी, साथ ही भारत पर कई तरह के प्रतिबंध लगा दिये। इससे भारत और अमेरिका के संबंध में काफी कड़वाहट ला दी। लेकिन इस विषम परिस्थिति में रूस ने भारत का साथ देकर भारत और रूस के साथ संबंधों को और मजबूत किया।

पोखरण परमाणु परीक्षण के बाद भारत के पड़ोसी देश चीन और पाकिस्तान दोनों में खलबली मच गई। भारत पर कई तरह के प्रतिबंध लगाने की दबाव भी अंतरराष्ट्रीय स्तर पर बनाया जाने लगा। भारत और अमेरिका के बीच अंतरराष्ट्रीय संबंध सामान्य तरीके से ही चलते रहे लेकिन इसमें कोई सुधार नहीं आया।

## 1998 पोखरण-2 परमाणु परीक्षण

1998 तत्कालीन प्रधानमंत्री अटल बिहारी वाजपेयी ने पोखरण में परमाणु परीक्षण करके पूरी दुनिया को हिलाकर रख दिया। इस परीक्षण के बाद इजरायल को छोड़कर पूरी दुनिया भारत के खिलाफ उठ खड़ी हुई और अमेरिका सहित कई देशों ने भारत पर आर्थिक प्रतिबंध भी लगा दिया। अमेरिका ने भारत से अपने राजदूत को भी वापस बुला लिया था। इसके बाद कुछ समय तक दोनों देशों के बीच काफी तनातनी रही।

वर्ष 2002 में अटल बिहारी वाजपेयी ने अमेरिका ने संयुक्त सत्र को संबोधित कर भारत और अमेरिका के बीच नए संबंधों की नींव रखी। पूर्व प्रधानमंत्री अटल बिहारी वाजपेयी के समय भारत और अमेरिका के बीच संबंधों में काफी सुधार आया। 2008 में भारत और अमेरिका के बीच सिविल न्यूक्लियर डील ने भारत और अमेरिका के बीच संबंधों को और भी मजबूत किया।

- बराक ओबामा कार्यकाल

भारत और अमेरिका दुनिया के सबसे बड़े लोकतांत्रिक देश हैं, जिसमें काफी समानता भी है। बराक ओबामा के साथ भारत और अमेरिका के रिश्ते में काफी मजबूती आई और दोनों देशों के बीच आर्थिक सहयोग सुधार और व्यापार में वृद्धि हुई। वर्ष 2010 में अमेरिकी राष्ट्रपति बराक ओबामा ने भारत यात्रा की। ओबामा ने भारतीय कारोबारियों को संबोधित किया, साथ ही भारत में निवेश करने और तकनीकी हस्तांतरण जैसे तमाम मुद्दों पर समझौता भी किया।

वर्ष 2015 में बराक ओबामा की दूसरी भारत यात्रा ने भारत और अमेरिका के रिश्ते को नई ऊंचाइयों पर पहुंचा दिया क्योंकि भारत के प्रधानमंत्री नरेंद्र मोदी ने अमेरिका के साथ मिलकर दुनिया से आतंकवाद को खत्म करने और शांतिपूर्ण सहअस्तित्व के निर्माण के लिए कई समझौते किये। साथ ही जलवायु परिवर्तन, आतंकवाद, गरीबी, कुपोषण, मानवाधिकार जैसे अंतरराष्ट्रीय मुद्दों पर साथ रहकर काम करने की इच्छा जतायी। इससे दोनों देश कई मुद्दों पर पास आये।

- डोनाल्ड ट्रम्प

2017 में डोनाल्ड ट्रम्प अमेरिका के नए राष्ट्रपति बने। इस दौरान भारत और अमेरिका के बीच रिश्तों को और मजबूती मिली। डोनाल्ड ट्रम्प का भारत के खिलाफ शुरू से रवैया काफी खास रहा है। ट्रम्प ने अपने चुनाव प्रचार के समय कहा था कि यदि वे राष्ट्रपति बनते हैं, तो अमेरिका में रह रहे हिन्दू समुदाय के लोगों के लिए वाइट हाउस में एक सच्चा दोस्त होगा।

डोनाल्ड ट्रम्प के राष्ट्रपति बनने के बाद प्रधानमंत्री मोदी पहले ऐसे विदेशी मंत्री थे, जिन्होंने वाइट हाउस का दौरा किया था। नरेंद्र मोदी ने अपने अमेरिकी दौरे के दौरान दोनों देशों के बीच अनेक समझौते किये।

हाल ही में डोनाल्ड ट्रम्प ने मुस्लिम आतंकवाद को खत्म करने के लिए भारत से खास मदद मांगी है। ट्रम्प ने अफगानिस्तान में भारत को सहयोग देने को कहा था। इसके अलावा अमेरिका पाकिस्तान पर नजर रखने के लिए भारत का साथ चाहता है।

- चीन

चीन के प्रभाव को कम करने के लिए भारत और अमेरिका की नेवी ने एशिया और प्रशांत महासागर में एक साथ युद्धाभ्यास किया। स्पष्ट है कि आज अमेरिका को अगर चीन को तगड़ा जवाब देने और उसके

प्रभाव को कम करने के लिए भारत की शक्ति जरूरत है। शायद इसी वजह से भारत और अमेरिका की सेनायें कई बार संयुक्त युद्धाभ्यास कर चुकी है और आने वाले समय में भी ऐसे कई समझौते हो चुके हैं जिसमें भारत और अमेरिका के बीच समझौते और युद्धाभ्यास शामिल है।

2017 में आज भारत और अमेरिका के अंतरराष्ट्रीय संबंधों के चार दशक बीत चुके हैं। अमेरिका और भारत के बीच एक अलग ही केमिस्ट्री दुनिया को देखने को मिल रही है। जो अमेरिका कभी चीन की सेना की मदद से भारत को हराने की कोशिश करता था, आज वही अमेरिका चीन को पीछे छोड़ने के लिए भारतीय सेना की मदद चाहता है। एशिया में दो महाशक्तियों का उदय हो रहा है, एक चीन और दूसरा भारत। चीन की शक्ति को संतुलन करने के लिए अमेरिका को भारत के साथ रहना ही पड़ेगा। अमेरिका को इस चिंता है कि ट्रैगन कही दुनिया भर से आगे न निकल जाए। एशिया में शक्ति संतुलन को बनाए रखने के लिए भारत का शक्तिशाली होना बेहद जरूरी है।

चीन को नियंत्रित करने के लिए अमेरिका ने भारत, जापान और ऑस्ट्रेलिया के साथ मिलकर एक रक्षा समझौता किया था। इसके तहत चारों देशों की सेनाओं ने मिलकर युद्धाभ्यास किया था।

हालाँकि अमेरिका ने कहा था कि यह सिर्फ एक युद्ध का अभ्यास था, लेकिन यह साफ है कि अमेरिका यह चीन को नियंत्रित करने के लिए करना चाहता था।

### भारत-अमेरिका के 'लव-हेट रिलेशनशिप'

भारत-अमेरिका एकदूसरे के साथ संबंधों को प्रगाढ़ करने का प्रयास जारी है लेकिन कई ऐसे मुद्दे हैं जिन्हें लेकर मतभेद सामने आते रहे हैं। प्रधानमंत्री नरेंद्र मोदी के दूसरे कार्यकाल में उनके सामने जो कई बड़ी चुनौतियां हैं, उनमें से एक है अंतरराष्ट्रीय कूटनीति के मोर्चे पर भारत का दबदबा और कायम करना। हालांकि अंतरराष्ट्रीय मामलों से निपटना इतना आसान नहीं होता है। कई बार किसी दो देशों से आपके संबंध इस बात पर निर्भर करते हैं कि उनके आपस में संबंध कैसे हैं। उदाहरण के तौर पर अमेरिका और ईरान को ले सकते हैं।

1. ईरान का मामला: चाबहार बंदरगाह को लेकर अमेरिका भारत के साथ कोई विवाद नहीं करना चाहता। हालांकि, भविष्य में विवाद संभावित है। अमेरिका ईरान को दुनिया में आतंकवाद का सबसे बड़ा प्रायोजक मान रहा है। लेकिन भारत इससे सहमत नहीं है। क्योंकि भारत जिस आतंकवाद का शिकार है, उसे सबसे बड़ी मदद सऊदी अरब करता है। सऊदी अरब अमेरिका का दोस्त है। सऊदी अरब से पाकिस्तान को संरक्षण मिलता है। पश्चिम एशिया में अमेरिका जिन देशों का साथ देता है, उनके खिलाफ रूस, ईरान और लेबनान खड़े हैं। तेल की लड़ाई भी सऊदी अरब और ईरान के बीच ही है। अमेरिका सद्दाम हुसैन के समय से ही ईरान के खिलाफ रहा है। लेकिन, भारत का ईरान के साथ सिर्फ तेल का रिश्ता नहीं है। भारत और ईरान ऐतिहासिक और सांस्कृतिक संबंधों को भी साझा करते हैं।
2. मध्य एशिया से संबंध: अमेरिका जानता है कि मध्य एशिया में भारत और चीन एक दूसरे के सबसे बड़े प्रतिद्वंद्वी हैं। चीन सिल्क रूट के जरिए पाकिस्तान के ग्वादर बंदरगाह तक अपनी पकड़ बनाना

चाहता है। वहीं, भारत ईरान में चाबहार तक पहुंचकर चीन को जवाब देना चाहता है। चीन और भारत का यह प्रयास सिर्फ सामरिक आयाम से ही मजबूती नहीं देगा बल्कि दोनों देशों को आर्थिक रूप से भी मजबूत करेगा।

3. अमेरिका ने जीएसपी से बाहर निकाला, भारत ने टैरिफ बढ़ा दिया: ट्रंप सरकार ने भारत को व्यापारिक वरीयता की लिस्ट यानी जीएसपी से बाहर कर दिया। यह एक ऐसी प्रणाली है जो विकासशील देशों को अमेरिका में अपने उत्पाद निर्यात करने पर लगने वाले शुल्कों में छूट देती है। यानी निर्यातकों के उत्पादों पर अमेरिका में 10% ज्यादा शुल्क लगेगा। इसके बाद भारत ने बादाम, अखरोट और दालों समेत 29 चीजों पर कस्टम ड्यूटी बढ़ा दिया। अमेरिकी उत्पादों पर भारत के टैरिफ पर ट्रंप पहले भी विरोध कर चुके हैं।
4. एस-400 मिसाइल का विवाद: भारत ने रूस से एस-400 मिसाइल रक्षा प्रणाली खरीदने की डील की है। इस पर अमेरिका ने चेतावनी दी है कि यदि भारत इस फैसले पर आगे बढ़ता है तो अमेरिका के साथ भारत के रक्षा संबंधों पर गंभीर असर पड़ेगा। अमेरिका भारत पर श्काउंटरिंग अमेरिकाज एडवर्सरीज थ्रू सैंक्शंस एक्ट के तहत प्रतिबंध लगा सकता है। लेकिन भारत बिना इस चेतावनी से डरे इस डील पर आगे बढ़ रहा है। इतना नहीं, अमेरिका को फ्रांस से राफेल और इजरायल से हो रहे रक्षा सौदों से भी दिक्कत है।
5. दोनों देशों के व्यापारिक संबंध: अमेरिका चीन की तुलना में भारत से ज्यादा व्यापारिक समझौते करना चाहता है। पिछले दो वर्षों में दोनों देशों के बीच व्यापार करीब 83.30 खरब रुपए से बढ़कर 98 खरब रुपए हो गया है। भारत की ऊर्जा को लेकर चिंता को दूर करने के लिए, अमेरिका ने 2017 में भारत में कच्चे तेल के निर्यात को 10 मिलियन बैरल से बढ़ाकर 2018 में 50 मिलियन बैरल कर दिया था।
6. भारत और अमेरिका के बीच रणनीतिक रिश्ते: हिंद-प्रशांत क्षेत्र में चीन के बढ़ते प्रभाव को रोकने के लिए अमेरिका भारत को रणनीतिक साझेदार मानता है। लेकिन इस को लेकर दोनों देशों की नीतियां अलग हैं। अमेरिका सीधे चीन से सामना करना चाहता है लेकिन भारत सीधे तौर पर चीन पर निशाना नहीं साधता। प्रधानमंत्री मोदी ने कई बार हिंद-प्रशांत क्षेत्र में बहुध्रुवीय व्यवस्था की बात कही है जिसमें सभी देशों के हितों की रक्षा हो सके।
7. भारत को नाटो सदस्य बनाना चाहता है अमेरिका: अमेरिकी सांसदों ने हाल ही में सीनेट में देश के रक्षा संबंधों में बदलाव करने के लिए एक विधेयक पेश किया है। यह विधेयक पास होता है तो भारत को अमेरिका की तरफ से आधुनिक हथियार मिलने में आसानी होगी। साथ ही भारत नॉर्थ एटलांटिक ट्रीटी ऑर्गेनाइजेशन (नाटो) के सहयोगी सदस्य का दर्जा हासिल कर लेगा।

## वर्तमान स्थिति

ऐसा लगता है कि आखरिकार अमेरिका और भारत को एक-दूसरे की दोस्ती रास आने लगी है। अमेरिका के विदेश मंत्री माइक पॉम्पियो की भारत यात्रा की वजह से भारत और अमेरिका के बीच रिश्तों को लेकर तनाव

काफी बढ़ गया था. बहुत से लोग ये दावा कर रहे थे कि ये रिश्ता डांवाडोल हो रहा है. लेकिन, विदेश मंत्री एस.जयशंकर के साथ साझा प्रेस कांफ्रेंस में माइक पॉम्पियो ने बार-बार दोनों देशों की रणनीतिक साझेदारी की अहमियत पर जोर डाला. दोनों नेताओं ने ये साफ कर दिया कि भले ही कारोबार को लेकर दोनों देशों में अभी भी गंभीर मतभेद हों, लेकिन, दोनों ही मुल्क इस समस्या को असरदार तरीके से सुलझाने को लेकर एकमत हैं. भारत के विदेश मंत्री एस.जयशंकर ने कहा कि अमेरिका, भारत का सबसे बड़ा व्यापारिक साझेदार है. ऐसे में दोनों ही देशों के बीच समय-समय पर मतभेद होने स्वाभाविक हैं. वहीं, माइक पॉम्पियो ने सुझाव दिया कि दोनों देशों के केवल द्विपक्षीय संबंधों को बेहतर बनाने तक सीमित नहीं रहना चाहिए. बल्कि, भारत और अमेरिका को दुनिया के और मसलों पर भी एक-दूसरे से सहयोग बढ़ाना चाहिए. अमेरिकी विदेश मंत्री ने साफ तौर पर कहा कि, "भारत और अमेरिका के दोस्ताना ताल्लुकात नई ऊंचाईयों को छूने की तरफ बढ़ रहे हैं."

ये बात सच है कि ट्रंप प्रशासन ने कई मुद्दों पर इस रिश्ते में दरार डालने का काम किया है. जो विवाद पर्दे के पीछे थे, उन्हें सामने ला खड़ा किया है. अब अमेरिका की मांग है कि भारत उसके निर्यात पर आयात शुल्क कम करे. इसी महीने, अमेरिका के राष्ट्रपति डोनल्ड ट्रंप ने भारत को जीएसपी यानी जनरल आइज्ड सिस्टम ऑफ प्रेफरेंस के तहत मिलने वाले कारोबारी फायदे खत्म कर दिए थे. ट्रंप का कहना है कि भारत, अमेरिका को अपने बाजार की बराबरी से और तार्किक तरीके से पहुंच का वादा करने में नाकाम रहा है. इसका मतलब ये है कि दोनों देशों के रिश्तों में आपसी व्यापार का मसला बार-बार उठने वाला है. दोनों ही देशों को अपने आर्थिक सहयोग को नए सिरे से परिभाषित करना होगा.

दूसरी तरफ, मध्य-पूर्व का संकट एक बार फिर गहरा रहा है. भारत, ईरान और अमेरिका, दोनों ही देशों से अपने संबंधों को बनाकर रखना चाहता है. अमेरिका ने ईरान से तेल खरीदने को लेकर भारत को जो रियायतें दे रखी थीं, वो खत्म हो गई हैं और, भारत अब इस नई हकीकत से तालमेल बिठाने में लगा हुआ है. आज की तारीख में भारत, पारंपरिक रूप से मध्य-पूर्व के देशों से ज्यादा तेल खरीदने के बजाय, अमेरिका से तेल का ज्यादा आयात कर रहा है. लेकिन, भारत, क्षेत्रीय स्थिरता का पक्षधर है और ये बात विदेश मंत्री एस. जयशंकर ने अमेरिकी विदेश मंत्री माइक पॉम्पियो से साफ कर दी है. जैसा कि विदेश मंत्री एस. जयशंकर ने साझा प्रेस कांफ्रेंस में कहा भी कि, "मध्य-पूर्व के साथ भारत के संबंध सिर्फ ऊर्जा सुरक्षा तक सीमित नहीं हैं. खाड़ी देशों में हमारे और भी हित हैं. वहां पर रहने वाले भारतीय मूल के लोग, मध्य-पूर्व से कारोबारी रिश्ते और क्षेत्रीय सुरक्षा से भी भारत के हित जुड़े हुए हैं."

माइक पॉम्पियो के भारत दौरे का एक और अहम मुद्दा था रूस से एस-400 ट्रायंग एयर डिफेंस सिस्टम की खरीद का था. अमेरिका ने रूस पर प्रतिबंध लगा रखे हैं. वहीं, भारत के रूस से ऐतिहासिक संबंध रहे हैं. भारत इनकी अनदेखी नहीं कर सका. भारत का पक्ष ये है कि उसे अमेरिकी कानून बा।।।। (बनदजमतपदह । उमतपबंरे । कअमतंतपमे जितवनहीँदबजपवदे । बज) के तहत रियायत मिलनी चाहिए. भारत ने अपने पक्ष में ये तर्क भी दिया कि अमेरिका के साथ करीब 10 अरब डॉलर के रक्षा सौदे प्रक्रिया में हैं. ऐसे में भारत के रक्षा मामलों में अमेरिका का रोल लगातार बढ़ रहा है. लेकिन, भारत ने ये भी स्पष्ट कर दिया है कि वो अमेरिका के साथ है। यानी औद्योगिक सुरक्षा एनेक्सी पर वार्ता को आगे बढ़ा रहा है. इससे दोनों देशों के बीच औद्योगिक

सहयोग भी और बढ़ेगा. लेकिन, विदेश मंत्री एस. जयशंकर ने प्रेस कांफ्रेंस में रूस के साथ भारत के संबंधों को रणनीतिक आयाम देते हुए ये भी कहा कि, "हमारे बहुत से देशों से बहुत तरह के ताल्लुकात हैं. इनमें से कई रिश्ते बहुत पुराने दौर से हैं. उनका एक लंबा इतिहास रहा है. हम अपने राष्ट्रीय हितों के हिसाब से इन संबंधों को देखते हैं. और आगे भी अपने राष्ट्रीय हितों को ध्यान में रखकर जरूरी कदम उठाएंगे. किसी भी देश के साथ रणनीतिक साझेदारी का एक अहम पहलू ये भी है कि वो अपने सहयोगी देश के दूसरे रणनीतिक संबंधों और राष्ट्रीय हितों को भी समझे और उनका भी सम्मान करे."

अमेरिका के विदेश मंत्री माइक पॉम्पियो की ये तीसरी भारत यात्रा थी. इसका मकसद, ओसाका में जी-20 सम्मेलन में प्रधानमंत्री नरेंद्र मोदी और अमेरिकी राष्ट्रपति डोनल्ड ट्रंप की मुलाकात की बुनियाद तैयार करना था. पॉम्पियो, भारत के साथ रिश्तों के बेहतर भविष्य के लिए बहुत उत्साहित रहे हैं. हालांकि राष्ट्रपति डोनल्ड ट्रंप ने इस संबंध में अनिश्चितता का पुट भी डाला है. भारत इस बात को लेकर आशंकित है कि अमेरिका एच-1बी वीजा की संख्या और कम करने वाला है. बहुत से भारतीय इस वीजा की मदद से अमेरिका जाकर काम करते हैं. हालांकि अमेरिका इस आशंका से इनकार करता रहा है. विदेश मंत्री एस. जयशंकर ने ये कहकर अमेरिका के साथ संबंध को लेकर नई उम्मीद जगाने की कोशिश की कि, "दोनों ही देशों के अपने-अपने हित हैं. ऐसे में ये सामान्य सी बात है कि कई बार इन हितों का टकराव भी होता है. लेकिन, हम कूटनीतिक तरीके से इन मसलों का हल निकाल लेंगे. हम अमेरिका के साथ बहुत सकारात्मक सोच के साथ बातचीत करेंगे."

भारत के साथ संबंध बेहतर करने में अमेरिका के अपने हित भी हैं. लेकिन, भारत की विदेश नीति की क्षमताओं को सिरे से खारिज करना, विश्व राजनीति में भारत के बढ़ते कद की तरफ से आंखें बंद कर लेने जैसा है. भारत में भले ही बहुत से लोगों के ये बात विरोधाभासी लगे, लेकिन, भारत असल में अमेरिका से अपने रिश्ते बेहतर कर के अपनी रणनीतिक स्वायत्तता को और बढ़ाना चाहता है. आज भारत के रणनीतिक हितों को सबसे बड़ा खतरा चीन से है. चीन से मुकाबले के लिए फिलहाल भारत के पास पर्याप्त क्षमता नहीं है. ऐसे में अमेरिका से रिश्ते मजबूत करके भारत आने वाले वकूत में फौरी तौर पर चीन से मिल रही चुनौती से निपट सकता है. वहीं, आगे चल कर भारत अपनी राष्ट्रीय शक्ति का विस्तार करके खुद को चीन से निपटने में सक्षम बनाने की दिशा में काम कर सकता है. विवादों के बावजूद माइक पॉम्पियो के भारत दौरे ने भारत और अमेरिका के द्विपक्षीय संबंध में नया जोश भरा है और विदेश मंत्री एस. जयशंकर के रूप में पॉम्पियो को ऐसा सहयोगी मिला है, जो दोनों देशों को व्यवहारिक लक्ष्य हासिल करने में मददगार होगा. अब ये जिम्मेदारी प्रधानमंत्री नरेंद्र मोदी और अमेरिकी राष्ट्रपति डोनल्ड ट्रंप पर है कि वो दोनों देशों को रिश्ते को एक नया रणनीतिक आयाम दें.

## निष्कर्ष

भारत पर नियंत्रण की कोशिश के बजाय 'भरोसा' करने में ही है अमेरिका की भलाई है केंद्र की मौजूदा सरकार भारी जनादेश के साथ सत्ता में आई है, उसे अंतरराष्ट्रीय बिरादरी में भारतीयों को उनकी सही जगह दिलाने की पहल करनी चाहिए. भारत मौजूदा वैश्विक व्यवस्था के उदारवादी नियमों, कायदों से बंधी व्यापार

और सुरक्षा नीतियों का समर्थन करेगा, लेकिन वह अमेरिकी का बंधक बनकर नहीं रह सकता. वह वैश्विक फैसलों में भागीदार बनने के लिए दबाव डालता रहेगा. भारत की लंबी अवधि के लक्ष्यों में बाधा डालने के बजाय अमेरिका को उसे ऐसे साथी देश के रूप में देखना चाहिए, जो उसकी बनाई उदारवादी व्यवस्था को बचाने में मददगार साबित हो सकता है. इसके लिए दोनों ही देशों को कुछ कुर्बानियां और समझौते करने होंगे. जिस पार्टनरशिप से 21वीं सदी की दिशा तय होने की उम्मीद है, उसके लिए इतनी उम्मीद तो की ही जा सकती है.

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## प्रेमचंद की कृति 'निर्मला' और वर्णित स्त्री-समाज

डॉ. दिव्या रानी\*

प्रेमचंद की रचनाओं में रचनाकार की प्रतिभा, समाज के प्रति एक साहित्यकार का पैनापन नजरिया, ज्वलंत सामाजिक मुद्दे जैसे कई आधारभूत एवं विशिष्ट पक्ष हम पाठकों के समक्ष रखे हैं। ये विशेषताएं जहां एक ओर इस धारणा को पुष्ट करता है कि "साहित्य समाज का आईना" क्यों होता है, वहीं दूसरी ओर इस बात को प्रमाणित करता है कि "प्रेमचंद को कथा सम्राट" की उपाधि क्यों दी गई! 'निर्मला' उपन्यास के माध्यम से प्रेमचंद भारतीय स्त्रियों बुनियादी समस्याओं – दहेज प्रथा, बेमेल विवाह, गरीबी, परिवार में बेटा और बेटी के प्रति अपनायी जानेवाली असमान दृष्टिकोण, आदि के दुष्प्रभावों को इस उपन्यास के 22 पात्रों के माध्यम से, जिनमें 8 पात्रों की असामयिक मृत्यु हो जाती है, को पूरी यथार्थ के साथ समाज के सामने रखा है।

भारतीय जीवन के यथार्थ का एक महत्वपूर्ण पक्ष परिवार और समाज में नारी की दैहिक एवं मानसिक शोषण व दोगम स्थिति से संबंधित है और यही कारण है कि भारतीय नवजागरण नारी की परम्परागत स्थिति में सुधार से अभिन्न रूप से जुड़ा हुआ था। प्रेमचंद के पूर्ववर्ती प्रबुद्ध उपन्यासकारों ने नारी सुधार के प्रति अपनी प्रतिबद्धता का भरपूर परिचय दिया था, बल्कि यह कहना भी असंगत नहीं होगा कि पूर्ववर्ती समाज प्रथाएँ उपन्यासों में स्त्री-समस्या केन्द्रीय कथ्य, उससे बहुत निकट बना रहा, पर प्रेमचंद के पूर्ववर्ती उपन्यासकार नारी संबंधी परंपरागत दृष्टिकोण में किसी क्रांतिकारी बदलाव के प्रति पक्षधर न थे। अधिकतर कथाकार नारी विषयक परंपरागत आचार संहिता के समर्थक थे।

प्रेमचंद के समय में भी नारी, विशेष कर मध्य और उच्च वर्ग की नारियां दोहरी दासता की शिकार थी। उसे न तो उन्हें पारिवारिक संपत्ति में हक था और न ही वह स्वतंत्र रूप से अपनी जीविका अर्जित करने में समर्थ थी। प्रायः लड़कियाँ शिक्षा से वंचित थीं। स्त्री की जगह केवल गृहिणी के रूप में या वेश्या के रूप में घर से बाहर कोठे पर थी। लड़कियों के विवाह के लिए तिलक-दहेज जुटाना अनिवार्य था और उनका विवाह होना भी जरूरी था। विवाह के पश्चात् यदि किसी भी तरह का उनके चर्चित्र में लांछन लग जाए या विधवा हो जाए तो समाज स्त्रियों के प्रति अत्यंत कठोर रूप अपना लेता था। सामाजिक बन्धनों एवं स्वीकृत प्रथाओं के कारण स्त्री का जीवन दासता का पर्याय बन चुका था। माता-पिता अपनी कन्याओं का विवाह तिलक-दहेज देने में असमर्थ होने के कारण अयोग्य, निर्धन या बूढ़े व्यक्ति से कर देते थे। इससे लड़कियों का जीवन अत्यंत नारकीय हो उठता था। " 'निर्मला' में प्रेमचंद ने इस यथार्थ का अंकन मार्मिक और तल्लुख रूप में किया है।" <sup>1</sup>

'निर्मला' शीर्षक उपन्यास के विषय में रामविलास शर्मा कहते हैं – "शायद यह प्रेमचंद का पहला दुखान्त उपन्यास है।" <sup>2</sup> इस उपन्यास में त्रासदी का आधार निर्मला का वह वैवाहिक जीवन है जिसमें वह स्त्रियोचित सुख से वंचित रहती है पति के संदेहपूर्ण दृष्टिबाण से विद्ध होकर तड़पती है तथा सुलभ वात्सल्य के सुख को भी उपलब्ध नहीं कर पाती। घोर दीनता के भाव से आवृत्त निर्मला को किसी करवट चौन नहीं है दृ न इस करवट य न उस करवट। उसके सामने उसका हमउम्र प्रिय पुत्र मंसाराम मर जाता है। जियाराम आत्महत्या

\*अतिथि सहायक प्राध्यापिका, एस0 एम0 कॉलेज, भागलपुर, ति0 माँ0 भा0 वि0, भागलपुर



कर लेता है। सियाराम साधु होकर घर से भाग जाता है और अंततः पति तोताराम बेटे सियाराम को खोजने को जो घर से निकलता है वह अंत में निर्मला की मृत्यु के पश्चात् ही घर लौटता है।

निर्मला की स्थिति 'उधर खाई, इधर कुआँ' वाली है। दरिद्रता के कारण वह मायके नहीं लौट सकती। अर्थहीनता के कारण वह पतिगृह को नहीं छोड़ सकती। यदि वह घर छोड़ भी देती तो क्या करती? या तो मजदूरी करके अपना निर्वाह करती या किसी अन्य पुरुष की रखैल बन जाती या वेश्या-वृत्ति करती। मजदूरी की स्थिति में पर पुरुष की हिंसक-वृत्ति से बच पाना क्या संभव था? और ये ही वे कारण हैं जिनके फलस्वरूप निर्मला अपने-आप को तोताराम की दासी के रूप में पूर्णतः समर्पित कर देती है। हाँ य इसके लिए पति की दासता और जीवन की दीनता ही एक मात्र उपाय या मार्ग बचता है जिसे निर्मला ने चुना और जिस पर वह चली। दीनता के आधार पर निर्मला अबला थी य विवशा थी। निर्मला वह अबला थी जिसके आँचल में वात्सल्य का भाव परिपूर्ण था, किन्तु, पति की सन्देह-दृष्टि के समक्ष वह अपने वात्सल्य भाव को भी प्राप्त करने में असमर्थ थी। फलतः निर्मला की आँखों में अपने दैन्य नारी-जीवन के आँसू भरे हुए थे। निर्मला का जीवन परिस्थितिगत दुःख-दैन्य शुष्क पतझड़ है। 'निर्मला' में सामाजिक परिस्थितिगत दीनता है।<sup>3</sup>

पुरुष प्रधान समाज अथवा परिवार में नारी का स्थान स्वभावतः एवं आवश्यक रूप से दूसरे दर्जे का हो जाता है। समस्त चिंतनय व्यवहार एवं सुविधा के लाभ-केंद्र में पुरुष-वर्ग रहता है तथा समस्त आलोचना, दुर्व्यवहार एवं असुविधा के हानि-केंद्र में स्त्रीवर्ग को स्थान मिलता है। दहेज समस्या, विधवा समस्या, बालविवाह दृ एवं वृद्ध विवाह समस्या-परिवार में नारी की दयनीय स्थिति की समस्या, झूठी शान-ओ-शौकत की समस्या आदि अनेक समस्याएँ मध्यवर्ग को विशेष रूप से पीड़ित कर रही है। निर्मला की स्वयं की सगी माँ कल्याणी जो नाम मात्र की कल्याणी है अपनी सगी ज्येष्ठ पुत्री निर्मला के विषय में दुमुहाँ विचार रखती है। प्रेमचंद ने कल्याणी के इस दुर्विचार का अपने उपन्यास में बेबाक वर्णन किया है। निर्मला के विवाह-संबंधी निर्णय में कल्याणी की भविष्य सुरक्षाजन्य अर्थ-कृपणता खुलकर सामने आती है। कल्याणी को अपने लड़के अपनी लड़कियों से अधिक प्यारे थे। अच्छे खान-पान पर, अच्छे कपड़े-लत्ते पर, अच्छी परवरिश पर पहला अधिकार उनका है। घर की सारी सुख-सुविधाओं पर पहला अधिकार बेटों का और दूसरा बेटियों का। इसलिए कल्याणी पं. मोटेराम से कहती है- "आखिर लड़कों को भी तो कुछ चाहिए। वे क्या समझेंगे कि हमारा भी कोई बाप था।"<sup>4</sup> ऐसा नहीं है कि कल्याणी खाली हाथ थी य घर में कुछ नहीं था। "मकान था, कुछ नगद था, कई हजार के गहने थे, लेकिन उसे अभी दो लड़कों का पालन-पोषण करना था, उन्हें पढ़ाना-लिखाना था। एक कन्या और भी चार-पाँच साल में विवाह करने योग्य हो जाएगी। इसीलिए वह कोई बड़ी रकम दहेज में न दे सकती थी।"<sup>5</sup> पालन-पोषण और पढ़ाने-लिखाने की भविष्य-चिंता के क्रम में छोटी बेटी कृष्णा का नाम कहीं नहीं आता। क्यों आएगा? उसे पालन-पोषण की क्या आवश्यकता है? उसे पढ़ाए-लिखाए जाने की क्या जरूरत है? उसे तो ऐसे ही बचा-खुचा जूठन खाकर जीना है या फटा-पुराना पहनकर समय काट लेना है। कमजोर होकर रहना है, रक्ताल्पता की रोगा होकर रहना है। पति की शैया की शोभा होकर रहना है। गर्भवती अवस्था या प्रसव काल में मर जाना है। बेटा और बेटी में अंतर करना भी समाज की परंपरागत रुढ़ि थी। घर की संपत्ति पर बेटे का हक तो होता ही है बढ़िया खाने-पीने और पहनने ओढ़ने की चीजों पर भी बेटे का पहला हक होता है। कल्याणी को "अपने लड़के अपनी लड़कियों से कहीं ज्यादा प्यारे थे। लड़के

हल के बैल है, भूसे—खली पर पहला हक उनका है, उनके खाने से जो बचे वह गायों का।" <sup>6</sup> इस प्रकार जन्म से लेकर मृत्यु तक जीवन के प्रत्येक पग पर भेदभाव, दोगम दर्जे, यही तो था नारी का जीवन चक्र।

विवाह के आगे दहेज की राक्षसी जो सुरसा की भांति मुँह बाए खड़ी है। आप एक हजार देने को तैयार हैं य सुरसा अपना मुँह बढ़ाकर दो हजार माँगेगी। आप पाँच देने को तैयार हुए य सुरसा का बढ़ा मुँह दस निगलने को तैयार है। और इस दहेज राक्षसी के कारण योग्य लड़की को योग्य वर नहीं मिलता। कोई उम्र के अनुकूल नहीं मिलता तो कोई रूप के अनुकूल नहीं मिलता। कोई स्वास्थ्य के अनुकूल नहीं मिलता तो कोई स्वभाव के अनुकूल नहीं मिलता। धनवाला मिल जाता है, मनवाला नहीं मिलता। घर में स्त्री लाख काम करे वह अर्थ—उपार्जन के वर्ग में नहीं आता। यही काम यदि वह दूसरे के यहाँ करे तो हजारों कमा सकती है, उसकी पूछ भी होगी, मोल भी होगा, किन्तु घर में उसकी कोई पूछ नहीं है, उसका कोई मोल नहीं है। कल्याणी एक प्रसंग में अपने पति उदय भानुलाल से कहती है — "तुम से दुनिया की कोई बात कही जाती है, तो जहर उगलने लगते हो। इसीलिए न कि जानते हो इसे कहीं ठिकाना नहीं है, मेरी ही रोटियों पर पड़ी हुई है य या और कुछ ! जहाँ कोई बात कही, बस सिर हो गए, मानो मैं घर की लौंडी हूँ, मेरा केवल रोटी और कपड़े का नाता है। " <sup>7</sup>

यानी औरत को घर की किसी बड़े फैसले को लेकर सलाह देने की जरूरत नहीं है, उससे सलाह लेने की जरूरत नहीं है और यदि सलाह मिल भी जाए तो उसपर अमल करने की जरूरत नहीं है। कारण, वह औरत की सलाह है। निर्मला अपने पति के लिए बनाव—सिंगार और बिस्तर की चीज है। उसपर संदेह की नजरबंदी आयद है य लागू है। अधबूढ़ा पति तोताराम अपनी नपुंसकता में इतना नीच हो गया है कि उसे विचार—कुविचार का विवेक ही नहीं रहा। वह निर्मला के हमउम्र बेटे के साथ उसकी वात्सल्यपूर्ण संगति को भी घृणित काम—वासना की पाप—दृष्टि से देखता है। क्यों ? इसलिए कि निर्मला नारी है। निर्मला नारी के रूप में इसी असमानतापूर्ण भेद—भाव के व्यवहार का आखेट होती है, शिकार होती है और अंत में सब कुछ खोने के बाद अपने प्राण भी खो बैठती है। निर्मला अपनी माँ के क्रूर कृपण व्यवहार के कारण त्रासद जीवन—यापन को विवश होती है। निर्मला ने सतीत्व के समक्ष नारीत्व का गला घोट दिया। निर्मला शीर्षक एवं नाम के अनुरूप सचमुच की निर्मला है। यह तथ्य पूर्ण सत्य है कि परिवार तथा समाज में भी दोनों के साथ नारी होने के कारण असमानता का व्यवहार होता है। मध्यम वर्गीय परिवार में औरतें घर का ही काम देख पाती हैं। निम्नवर्गीय परिवार की तरह बाहर काम नहीं कर पातीं। उच्च वर्गों की भोंडी नकल करनेवाले मध्यवर्गीय परिवारों की स्त्रियाँ को तो घर के भीतर ही आमोद—प्रमोद करना, सस्ती विलासिता में मस्त रहना ही जीवन का उद्देश्य प्रतीत होता है। चूँकि मध्यवर्गीय परिवारों की आर्थिक स्थिति खोखली होती है और उनकी इच्छाएँ उच्चवर्गीय लोगों की तरह उच्च होतीय है फलतः एक मिथ्या मान—सम्मान और बड़प्पन का बोध उन्हें ग्रस्त किए रहता है। ऐसे परिवारों में प्रदर्शन और खोखले दिखावों का बड़ा सम्मान होता है। आर्थिक अभाव, ऊँचे अरमान में पिसते हुए मध्यवर्ग की अपनी जटिल समस्याएँ हैं। चाहे—अनचाहे अपने सामाजिक मर्यादा को सुरक्षित रखने के लिए प्रचलित सड़ी—गली सामाजिक—धार्मिक मान्यताओं को ओढ़ना ही पड़ता है। इसीलिए हम पाते हैं कि धर्म, परम्परा और नारी—पुरुषों से संबंधित जीवन—मूल्यों के क्षेत्र में जितनी घुटन मध्यवर्ग में है य उतनी कहीं नहीं। और ये सभी विडम्बनाएँ न जाने कितने वर्षों से समाज को जकड़े हुई हैं। इन जकड़नों

में पड़कर न जाने कितनी—कितनी निर्मला का जीवन उजड़ चुका है य वे मृत्यु की शरण में चली गई हैं। न इन्हें उचित स्थान मिलता है य न पर्याप्त सम्मान मिलता है। " यह भी विडम्बना ही है कि युवती संसार छोड़ कर चली जाती है और बूढ़ा तोताराम जीवित रहता है।"<sup>8</sup>

निर्मला सामान्य भारतीय नारी की चरित्र का प्रतिनिधित्व व चित्रांकन है। निर्मला मर्यादा की लीक पर चलनेवाली महिला थी। उसने मैके में अपनी माँ के वचन का निर्वाह किया। ससुराल में माँ और पत्नी के धर्म का निर्वाह किया। स्त्री की मर्यादा की सीमा के बाहर उसने कहीं कदम न रखा। " स्त्री स्वभाव से लज्जाशील होती है। कुलटाओं की बात दूसरी है। पर साधारणतः स्त्री पुरुष से कहीं ज्यादा संयमशील होती है।"<sup>9</sup> निर्मला मर्यादित आचरण की महिला थी। हर व्यक्ति परिवार, समाज और समय का अपना मूल्य होता है। निर्मला का अपना मूल्य था, कल्याणी का अपना, तोताराम का अपना, डॉ. भुवनमोहन का अपना। निर्मला उस मूल्य की रक्षा में मरी, परन्तु आत्मा पर कोई बोझ नहीं था। डॉ. उस मूल्य को गँवाकर मरा आत्मा पर गहन विषाद का बोझ लिए। कहना होगा कि 'निर्मला' में स्त्री से संबंधित समाज की जो परंपरागत रुढ़ियाँ थी, मूल्य थे और मर्यादाएँ थी वे सब की सब स्त्रियों की मृत्यु के बंधन में बँधी हुई और एक सीमा में उनके रक्त से रक्तिम थीं।

पुरुष समाज को तो निर्मला जैसी ही स्त्री चाहिए, क्योंकि निर्मला पुरुषवादी मानसिकता के लिए पूरी तरह उपयुक्त जो थी। निर्मला उस गाय की समान थी जिसे जिस खूटे में बांधना है बांध दो, जो खाना — पीना देना है दे दो, जितना जुल्मो सितम ढाना है ढा दो, कोई प्रतिउत्तर नहीं, कोई मानवता नहीं। क्या इस तरह एक स्त्री को शोषित — लाचार — अधिकारविहीन व प्रताड़ना देकर कोई समाज या देश कैसे आगे बढ़ सकता है? प्रेमचंद "निर्मला" के माध्यम से भारतीय समाज खासकर पुरुष प्रधान समाज की खोखली मानसिकता को पूरी तरह उजागर किया है। निर्मला की समाज में प्रासंगिकता तब तक रहेगी जब तक पुरुषवादी सोच समाज में विद्यमान रहेगी।

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6. वही.
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# माध्यमिक विद्यालयों में अध्ययनरत विद्यार्थियों के पारिवारिक वातावरण का अध्ययन

श्रीमती रजनी दुबे\*

## प्रस्तावना

शोधकर्ता द्वारा समय-समय पर देखा जाता रहा है कि किशोर बालकों में बात-बात पर क्रोधित हो जाना, अपराध करना, किसी का सम्मान न करना, समाज में सुसमायोजित प्रवृत्ति के साथ विकसित होना, परिवारों का टूटना, तलाक, अभिभावकों का प्रतिदिन झगड़ना, बच्चों को अधिक समय न देना आदि कारणों से किशोर बालकों का व्यक्तित्व विकास उचित प्रकार से नहीं हो पा रहा है, सभी व्यक्ति आधुनिकता की दौड़ में दौड़ रहे हैं, जहाँ पीछे मूल्य, अपनापन, प्रेम, स्नेह आदि छूटते चले जा रहे हैं, और विकृत व्यक्तित्व तैयार हो रहे हैं। इस परिवेश के आधार पर समाज को बेहद नुकसान पहुँच रहा है अतः सूक्ष्म एवं विस्तृत स्तर पर इस समस्या का अध्ययन किया जाना आवश्यक है।

क्योंकि वर्तमान समय में आकर्षक व्यक्तित्व भावनात्मक विशिष्टता आदि चिंतन का विषय है कि किस तरह परिवार का वातावरण अनुकूल करके संवेगों में परिपक्वता लाकर, बालक में स्वस्थ व्यक्तित्व का निर्माण किया जाये। वर्तमान में हम 21वीं सदी में पदार्पण कर चुके हैं, जहाँ पर विश्वव्यापीकरण, मीडिया का प्रचार-प्रसार, आधुनिकीकरण, पश्चिमीकरण, इंटरनेट जैसे विभिन्न आयामों के बीच एक व्यक्ति को अपना जीवन यापन करना है। अतः व्यक्तित्व का निर्माण नवीन परिवेश में कैसे हो? संवेगों में परिपक्वता कहाँ से लाई जाये? क्योंकि रेजन परिशोधन करने का समय अभिभावकों के पास नहीं है। पारिवारिक वातावरण दूषित होता जा रहा है, परिवार संयुक्त से एकल हो गये है। इन सभी कारकों के अध्ययन की आवश्यकता है। परिवारों में बच्चों हेतु समय, उन्हें समाज में समायोजित करना, उन्हें बाल्यावस्था से संवेगों हेतु परिपक्व करके एक स्वस्थ व्यक्तित्व का निर्माण कैसे सम्भव हो सकता है।

## समस्या कथन

“माध्यमिक विद्यालयों में अध्ययनरत विद्यार्थियों के पारिवारिक वातावरण का अध्ययन”

## अध्ययन के उद्देश्य

1. माध्यमिक विद्यालयों में अध्ययनरत विद्यार्थियों के पारिवारिक वातावरण का अध्ययन करना।
2. माध्यमिक विद्यालयों में अध्ययनरत ग्रामीण एवं शहरी विद्यार्थियों के पारिवारिक वातावरण में पाये जाने वाले अन्तर का अध्ययन करना।
3. शासकीय एवं अशासकीय माध्यमिक विद्यालयों में अध्ययनरत विद्यार्थियों के पारिवारिक वातावरण में पाये जाने वाले अन्तर का अध्ययन करना।

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## अध्ययन की परिकल्पनाएं

1. माध्यमिक विद्यालयों में अध्ययनरत विद्यार्थियों के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होता है।
2. माध्यमिक विद्यालयों में अध्ययनरत ग्रामीण एवं शहरी विद्यार्थियों के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होता है।
3. शासकीय एवं अशासकीय माध्यमिक विद्यालयों में अध्ययनरत विद्यार्थियों के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होता है।

## अध्ययन में प्रयुक्त चर

स्वतंत्र चर – पारिवारिक वातावरण  
जनसंख्यात्मक चर –  
लिंगायत – छात्र/छात्रा  
विद्यालय प्रकार –शासकीय/अशासकीय  
परिवेश –ग्रामीण/शहरी

## शोध सीमांकन

- प्रस्तुत शोध प्रबन्ध के अध्ययन की सीमा तथा कार्यक्षेत्र निम्नलिखित स्तर तक परिसीमित है –
1. प्रस्तुत अध्ययन को ग्वालियर जिले तक सीमित किया गया है।
  2. प्रस्तुत अध्ययन को माध्यमिक विद्यालय के विद्यार्थियों तक ही सीमित किया गया है।
  3. प्रस्तुत अध्ययन केवल ग्रामीण एवं शहरी विद्यार्थियों तक ही सीमित किया गया है।
  4. प्रस्तुत अध्ययन केवल शासकीय एवं अशासकीय माध्यमिक विद्यालयों तक ही सीमित किया गया है।
  5. प्रस्तुत अध्ययन को केवल 400 विद्यार्थियों तक ही सीमित किया गया है।
  6. प्रस्तुत अध्ययन विद्यार्थियों के पारिवारिक वातावरण तक ही सीमित है।

## जनसंख्या

प्रस्तुत शोध कार्य हेतु राजस्थान राज्य के धौलपुर जिले से 400 माध्यमिक स्तर के विद्यार्थियों का चयन किया गया है।

अध्ययन की विधि – प्रस्तुत अध्ययन में सर्वेक्षण विधि का प्रयोग किया गया है।

## उपकरण

प्रस्तुत शोध में स्व निर्मित पारिवारिक वातावरण परिसूची उपकरण का प्रयोग किया गया है।

## सांख्यिकीय विधियाँ

प्रस्तुत शोधकार्य में आंकड़ों के संकलन एवं प्रदत्तों के विश्लेषण हेतु मध्यमान, मानक विचलन, 'टी' परीक्षण आदि विधियों का प्रयोग किया गया है।

### प्रदत्तों का विश्लेषण एवं व्याख्या

#### परिकल्पना 1

माध्यमिक विद्यालयों में अध्ययनरत छात्र एवं छात्राओं के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होता है।

तालिका 1 छात्र एवं छात्राओं के पारिवारिक वातावरण के मध्यमानों का “टी” विश्लेषण

क्र० सं०	समूह	संख्या N	मध्यमान M	मानक विचलन SD	मानक त्रुटि SEd	मुक्तांश df	“टी” t	सार्थक स्तर
1	छात्र	200	68.5	9.42	2.21	398	97	0.05
2	छात्राएं	200	68.71	8.65				

उपर्युक्त तालिका यह दर्शाती है कि प्राप्त “टी” 0.97 का मान 0.05 स्तर पर सार्थकता के लिए आवश्यक न्यूनतम टी मान 1.97 से कम है। अतः स्पष्टतः दोनों मध्यमानों के बीच अवलोकित अंतर 0.05 स्तर पर सार्थक नहीं है। अतः शून्य परिकल्पना सत्य है एवं स्वीकृत की जाती है। अतः कह सकते हैं कि छात्र एवं छात्राओं के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं है।

परन्तु कालरा 2004 ने शैक्षिक उपलब्धि पर पारिवारिक वातावरण के प्रभाव का अध्ययन में सार्थक अंतर पाया। दोनों अध्ययनों में अंतर का कारण न्यादर्श में अंतर तथा पारिवारिक वातावरण व शैक्षिक उपलब्धि के सन्दर्भ में अध्ययन के कारण पाया गया। वर्तमान में अभिभावकों के द्वारा छात्र-छात्राओं का एक समान लालन-पालन किया जा रहा है। दोनों को समानान्तर शिक्षा दी जा रही है।

#### परिकल्पना 2

माध्यमिक विद्यालयों में अध्ययनरत ग्रामीण एवं शहरी विद्यार्थियों के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होता है।

तालिका 2 माध्यमिक विद्यालयों में अध्ययनरत ग्रामीण एवं शहरी विद्यार्थियों के पारिवारिक वातावरण के मध्यमानों का “टी” विश्लेषण

क्र० सं०	समूह	संख्या N	मध्यमान M	मानक विचलन SD	मानक त्रुटि Sed	मुक्तांश df	“टी” t	सार्थक स्तर
1	छात्र	200	70.65	8.86	2.22	398	5.16	0.05 सार्थक
2	छात्राएं	200	82.07	9.10				

उपर्युक्त तालिका 4.9 यह दर्शाती है कि प्राप्त “टी” 5.16 का मान 0.05 स्तर पर सार्थकता के लिए आवश्यक न्यूनतम टी मान 1.97 से अधिक है। अतः स्पष्टतः दोनों मध्यमानों के बीच अवलोकित अंतर 0.05 स्तर पर सार्थक है। अतः शून्य परिकल्पना असत्य है एवं अस्वीकृत की जाती है। अतः हम कह सकते हैं कि ग्रामीण विद्यार्थी एवं शहरी विद्यार्थियों के पारिवारिक वातावरण में सार्थक अन्तर है।

अर्थात् हम कह सकते हैं कि ग्रामीण एवं शहरी विद्यार्थियों के मध्यमान क्रमशः 70.65 एवं 82.07 हैं को देखने पर ज्ञाता होता है कि ग्रामीण विद्यार्थियों की अपेक्षा शहरी विद्यार्थियों का पारिवारिक वातावरण उच्च है।

परन्तु वर्मा उर्मिला ने 2011 शहरी एवं ग्रामीण छात्र-छात्राओं की संज्ञानात्मक योग्यता सामान्य बुद्धि एवं पारिवारिक वातावरण के अध्ययन में महत्वपूर्ण अन्तर पाया गया है। दोनों अध्ययनों में समानता का कारण है कि परिवेश स्थान, परिवार उपलब्ध साधनों एवं अभिप्रेरणा का प्रभाव व्यक्तित्व विकास में अदभुत रूप से दृष्टिगोचर होता है।

### परिकल्पना 3

शासकीय विद्यालय एवं अशासकीय विद्यालय के विद्यार्थियों के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होता है।

### तालिका 3

माध्यमिक विद्यालयों में अध्ययनरत शासकीय एवं अशासकीय विद्यालय के विद्यार्थियों के पारिवारिक वातावरण के मध्यमानों का "टी" विश्लेषण

क्र० सं०	समूह	संख्या N	मध्यमान M	मानक विचलन SD	मानक त्रुटि Sed	मुक्तांश df	"टी" t	सार्थक स्तर
1	शासकीय विद्यालय के विद्यार्थी	200	73.18	10.84	1.87	398	3.45	0.05 सार्थक
2	अशासकीय विद्यालय के विद्यार्थी	200	79.65	10.47				

उपर्युक्त तालिका 4.12 यह दर्शाती है कि प्राप्त "टी" परीक्षण गणना द्वारा प्राप्त मान 3.45 है जो 0.05 स्तर पर सार्थकता के लिए आवश्यक न्यूनतम टी मान 1.97 से ज्यादा है। इसलिए छात्र एवं छात्राओं के दोनों समूहों के बीच सार्थक अन्तर है।

अतः स्पष्टतः दोनों मध्यमानों के बीच अवलोकित अंतर 0.05 स्तर पर सार्थक है। अतः शून्य परिकल्पना असत्य है एवं अस्वीकृत की जाती है। अतः हम कह सकते हैं कि शासकीय विद्यालय एवं अशासकीय विद्यालय के विद्यार्थियों के पारिवारिक वातावरण में सार्थक अन्तर है।

इस कथन की पुष्टि विक्रम 2011 का अध्ययन करता है इन्होंने शासकीय एवं अशासकीय विद्यालयों में अध्ययनरत हाई स्कूल स्तर के विद्यार्थियों की गणित विषय में शैक्षिक उपलब्धि पर पारिवारिक वातावरण पाया।

दोनों अध्ययनों में समानता के कारण कह सकते हैं कि शैक्षिक उपलब्धि पर पारिवारिक वातावरण का प्रभाव दृष्टिगोचर होता है क्योंकि यदि उचित देखरेख, सहयोग की भावना, अनुकूल वातावरण आदि मिले तो उच्च शैक्षिक उपलब्धि संवेगों में परिपक्वता एवं उचित व्यक्तित्व का विकास होता है एवं प्रतिकूल वातावरण के कारण ये अविकसित रह जाते हैं।

## निष्कर्ष

परिकल्पना 1— माध्यमिक विद्यालयों में अध्ययनरत छात्र एवं छात्राओं के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होने के सन्दर्भ में अध्ययन किया, और सार्थक अन्तर नहीं (मुक्तांश 398 टी 0.97) पाया गया। अर्थात् छात्र एवं छात्राओं के पारिवारिक वातावरण एक समान पाये गये।

परिकल्पना 2— माध्यमिक विद्यालयों में अध्ययनरत ग्रामीण एवं शहरी विद्यार्थियों के पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होने के सन्दर्भ में अध्ययन किया और सार्थक अन्तर (मुक्तांश 398 टी 5.16) पाया गया। अर्थात् ग्रामीण विद्यार्थियों की तुलना में शहरी विद्यार्थियों का पारिवारिक वातावरण उत्तम पाया गया।

परिकल्पना 3— माध्यमिक विद्यालयों में अध्ययनरत शासकीय एवं अशासकीय विद्यालय के विद्यार्थियों में पारिवारिक वातावरण में कोई सार्थक अन्तर नहीं होने के सन्दर्भ में अध्ययन किया और निष्कर्ष रूप में पाया कि सार्थक अन्तर (मुक्तांश 398 टी 3.45) है अर्थात् शासकीय विद्यालय के विद्यार्थियों का पारिवारिक वातावरण उच्च पाया गया, क्योंकि माता-पिता विद्यार्थियों के व्यक्तित्व विकास में परिवार की अहम् भूमिका के परिप्रेक्ष्य में जागरूक हो रहे हैं।<sup>16</sup>

## शैक्षिक महत्व

शोधकार्य में प्राप्त निष्कर्ष एवं परिणामों का समाज एवं राष्ट्र की उन्नति में महत्वपूर्ण स्थान होता है। अनुसंधान द्वारा मूलभूत समस्याओं के उचित समाधान हेतु निष्कर्ष निकाले जाते हैं, जो ज्ञान वृद्धि एवं जनकल्याण में सहायक होते हैं।

## परिवार हेतु सुझाव

पारिवारिक वातावरण में जो सबसे महत्वपूर्ण है वो यह कि सभी को बराबरी का सम्मान और स्थान मिले। यह नहीं कि कोई छोटा हो तो उसे कम सुविधायें या कोई कम कमाता हो तो उससे सही वर्ताव न करना। यह असमानता बच्चे के मस्तिष्क पर गहरा प्रभाव डालती है, इसलिए बच्चे के सामने सबसे सही व्यवहार करना चाहिए, ताकि उसे गलत शिक्षा न मिले तथा यह परवरिश उसके साथ ताउम्र रहे।

आदर या सम्मान की भावना दिल से किसी के लिए आती है। बच्चों को यह शुरू से समझाना चाहिए कि चाहे छोटा हो या बड़ा, अमीर या गरीब उसे दिल से सम्मान करें। किसी को आप कुछ मत दीजिए लेकिन सम्मान दीजिए और आदर देने की यह शुरुआत परिवार से होती है क्योंकि बच्चा बचपन में जो देखता है वही सीखता है क्योंकि रिश्तों में ईमानदारी और विश्वास जरूरी होता है। बच्चों को बचपन से ही रिश्तों के प्रति विश्वास तथा ईमानदारी का वातावरण दिया जाये तो आगे आने वाले समय में वो जितने भी रिश्ते बनायेंगे वो स्थायी और मजबूत होंगे। इससे उनके जीवन में मजबूत रिश्तों के कारण स्थायित्व बना रहेगा। यह भी सही है कि बच्चे देखकर ही सीखते हैं इसलिए घर में रिश्ते की यह आदर्श मिसाल जरूर पेश करें।

इस प्रकार अध्यापक, परिवार यदि सकारात्मक दृष्टिकोण बनाये रखें व अपनी जिम्मेदारी को समझें तो ऐसे अवसरों की कमी नहीं, जिनका उपयोग करके विद्यार्थियों में मूल्यों का सम्बर्द्धन का बेहतरीन प्रयास करके उनका व्यक्तित्व विकसित किया जा सकता है।



## शिक्षकों हेतु सुझाव

विद्यार्थियों में नेतृत्व गुणों का विकास करने हेतु समूह कार्य, भाषण, वाद-विवाद, समूह गान, नृत्य एवं इन सभी कार्यों से आने वाली समस्याओं का समाधान करने का अवसर व प्रेरणा प्रदान करे।

बाल शिक्षा, बाल व्यवहार, किशोर किशोरियों की अनेक समस्याओं का निदान परामर्श केन्द्र, रैगिंग, शिकायत निवारण कक्ष, यौन समस्या निदान केन्द्र, आदि की व्यवस्था अवश्य की जानी चाहिए जिससे उनका शारीरिक, मानसिक विकास किया जा सके।

कक्षा शिक्षण के अवलोकन द्वारा ज्ञात होने पर पिछड़े छात्र, उग्र छात्र, समस्याग्रस्त छात्रों हेतु उपचारात्मक शिक्षण की व्यवस्था की जाये।

## विद्यार्थियों हेतु सुझाव

शिक्षण जीवन काल बहुमूल्य काल होता है और यह सम्पूर्ण जीवन का आधार है। अतः विद्यार्थियों को समय का मूल्य पहचानना चाहिए।

विद्यालय का वातावरण, शिक्षकों का व्यक्तित्व तथा विद्यालय में उपलब्ध भौतिक सुविधायें, विद्यार्थियों में जीवन मूल्य प्रदान करने में सहायक होते हैं। इन्हें विद्यार्थियों को अपने सर्वांगीण विकास में उपयोग करना चाहिए।

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# आधुनिक भारतीय परिवेश में डॉ० ए० पी० जे० अब्दुल कलाम के शैक्षिक विचारों का अध्ययन

डॉ. श्रीमती बृजवाला शर्मा\*

## प्रस्तावना

प्राचीन काल से ही भारत की सभ्यता एवं संस्कृति की अलग पहचान रही है। भारत के स्वर्णिम अतीत में शिक्षा ने अपनी भूमिका ऐसे दिग्दर्शक के रूप में स्वीकारी और समझी जिसका उद्देश्य चरित्र का संस्कार करना था। इसका लक्ष्य यह था कि इस सांस्कृतिक परिमार्जन के माध्यम से चारित्रिक दृढता अर्जित की जा सके। जो शिक्षा हमें भारतीयता की अस्मिता से जोड़ती थी वह कोई थोथी भौतिक परिपूर्णता नहीं चाहती थी बल्कि वास्तविक कसौटियों को जीवन की परिपूर्णता के सन्दर्भ में लागू करती थी। भारत में प्राचीनकाल से ही आध्यात्मिक, सांस्कृतिक एवं नैतिक मूल्यों से युक्त सुसंगठित शिक्षा व्यवस्था दृष्टिगत होती है जो स्वयं में अद्वितीय है किन्तु विदेशी आक्रमणों के परिणामस्वरूप भारत की अतुलनीय सम्पत्ति का ह्रास ही नहीं हुआ बल्कि शिक्षा व्यवस्था व ज्ञान के स्वरूप में भी अधोगति हुई। ज्ञान-विज्ञान एवं प्रौद्योगिकी में विदेशी अनुसंधानों एवं खोजों पर आश्रित भारत को यदि अपने अतीत की गौरवशाली अवस्था एवं स्थिति को पुनः प्राप्त करना है तो आयातित शैक्षिक चिन्तन के प्रत्यय एवं संकल्पनाएं त्याग कर स्वयं की मौलिक शैक्षिक व्यवस्था विकसित करनी होगी—अपनानी होगी।

हमारी शिक्षा व्यवस्था पर आधारित प्रतिभा और साधना परिलक्षित होनी चाहिए। आज जब समूचा विश्व, ब्रह्माण्ड के अन्य ग्रहों पर भी जीवन को तलाशने में सक्षम होता जा रहा है। तब हमें भी ज्ञान और विज्ञान को अपने जीवन लक्ष्य एवं राष्ट्र के विकास के साथ जोड़ने की आवश्यकता है। बढ़ते आधुनिकतावाद से प्रभावित भारतीय मस्तिष्क प्रतिभा पलायन द्वारा भारत के निर्माण में अपनी भूमिका समझने में असमर्थ सा लगता है।

कई प्रयासों की अविश्राम श्रृंखला के द्वारा वर्तमान भारत की शिक्षा व्यवस्था को समयानुकूल एवं प्रासंगिकता प्रदान करने के लिए लगातार प्रयत्न किये जा रहे हैं। आज इसी श्रृंखला में डॉ० ए० पी० जे० अब्दुल कलाम जिन्हें बच्चे प्यार से “काका कलाम” कहते हैं, के शैक्षिक विचार भारत के पुनर्निर्माण में सशक्त योगदान दे सकते हैं। विकसित राष्ट्र के रूप में भारत को प्रतिष्ठित करने की तीव्र लालसा से युक्त डॉ० कलाम अपने उत्साही विचारों द्वारा हर भारतीय युवा मन को आंदोलित करते हुए उनको सही दिशा देने में सक्षम व्यक्तित्व के रूप में उभरे हैं। विकसित राष्ट्र के रूप में भारत को प्रतिष्ठित करने की तीव्र लालसा से युक्त डॉ० कलाम अपने उत्साही विचारों द्वारा हर भारतीय युवा मन को आंदोलित करते हुए उनको सही दिशा देने में सक्षम व्यक्तित्व के रूप में उभरे हैं। विकसित राष्ट्र के रूप में प्रतिष्ठित होने के लिए भारत को अभी कई पड़ाव तय करने हैं। इसके लिए विभिन्न क्षेत्रों में विशेष अभियान एवं पुनर्निर्माण हेतु ठोस एवं उपयुक्त प्रयत्न ही समीचीन होंगे।

\*एम० एस० सी०, एम० एड० नेट, पी-एच०डी० प्रोफेसर - सर्वधर्म महाविद्यालय ग्वालियर

डॉ० ए० पी० जे० अब्दुल कलाम एक कुशल प्रशासक, योग्य इंजीनियर व अग्रणी शीर्षस्थ वैज्ञानिक ही नहीं अपित राष्ट्रहित तत्पर, प्रबुद्ध चिन्तक व पुनर्निर्माण के पुरोधा भी हैं। राष्ट्र के विकास के विभिन्न क्षेत्रों में उनके विचार, सुझाव एवं योजनाएं रामबाण सदृश्य हैं। उन्होंने पुनर्निर्माण व प्रगति को लक्ष्य बिन्दु मानकर जीवन के सभी राष्ट्रीय पक्षों को पोषित किया है। वर्तमान भारत के नवनिर्माण की रूपरेखा के निमित्त उनका महत्वपूर्ण योगदान है।

### उद्देश्य

1. डॉ० ए० पी० जे० अब्दुल कलाम के शैक्षिक विचारों का अध्ययन करना।
2. शिक्षा तकनीकी के विकास व उसके शिक्षा में प्रयोग के सम्बन्ध में डॉ० कलाम के विचारों को मूर्त स्वरूप प्रदान करना।
3. पर्यावरण शिक्षा के सम्बन्ध में डॉ० कलाम के विचारों का अध्ययन करना।

### शैक्षिक विचार

शिक्षा राष्ट्र के विकास एवं नवनिर्माण का प्रमुख साधन रही है। इसके अभाव में राष्ट्रीय विकास की बात करना रेत से महल का निर्माण करना है। डॉ० कलाम ने शिक्षा को अपने विचार का केन्द्र बनाया है। उनके अनुसार देश केवल कुछ लोगों के महान होने से महान नहीं होता बल्कि इसलिए महान होता है कि उस देश में हर कोई महान होता है। अतः युवाओं को शिक्षा में श्रेष्ठता प्राप्त करनी चाहिए और उन्हें नैतिक मूल्यों तथा समाज कल्याण की भावना के साथ मनुष्य बनना चाहिए। युवाओं के समन्वित तथा केन्द्रित प्रयास भारत को एक विकसित देश बनाने की चुनौती को पूरा कर सकते हैं। इसके लिए अदम्य उत्साहपूर्ण जन संसाधन की आवश्यकता होगी जिसका कार्यभार शैक्षिक केन्द्रों को ग्रहण करना चाहिए। सफलता के लक्ष्य को प्राप्त करने के लिए स्वप्न अवश्य होना चाहिए।

### शिक्षा का अर्थ

डॉ० कलाम के अनुसार शिक्षा एक शक्तिशाली तथा विकसित राष्ट्र का स्तम्भ है। अतः वर्तमान आवश्यकतानुरूप शिक्षा बहुउद्देशीय होनी चाहिए। उनके अनुसार शिक्षा वह प्रक्रिया है जिसके द्वारा व्यक्ति के शारीरिक, मानसिक, आर्थिक एवं आध्यात्मिक पहलुओं का विकास किया जाता है। शिक्षा मात्र सैद्धान्तिक न हो बल्कि व्यावहारिक एवं व्यक्ति को आत्म निर्भर बनाने में सक्षम होनी चाहिए। शिक्षा ज्ञान का संरक्षण, संवर्धन व प्रसार करती है। अतः गुणवत्ता पूर्ण शिक्षा व्यक्ति, समाज एवं राष्ट्र के विकास की आधारशिला है। शिक्षा द्वारा ही बौद्धिक समाज का निर्माण सम्भव है। शिक्षा राष्ट्रीय विकास की धुरी है।

### शिक्षा के उद्देश्य

डॉ० कलाम शिक्षा को जीवन, समाज व राष्ट्र के विकास की नींव मानते हैं। उनके अनुसार शिक्षा द्वारा उद्देश्यों की पूर्ति होनी अपरिहार्य है। जैसे-जैसे उनके विचार में ज्ञान सम्पन्न मस्तिष्क उत्पन्न करने के

लिए शिक्षा महत्वपूर्ण है ताकि वह नये विचार दे सके। शिक्षा सीखने की प्रक्रिया होनी चाहिए न कि पढ़ने की या पुनरुत्पादन की। छात्रों का शारीरिक, मानसिक, संवेगात्मक सामन्जस्य क्षमता का विकास और नैतिक एवं आध्यात्मिक विकास करना। छात्रों में रचनात्मकता व सृजनात्मकता का विकास करना शिक्षा का प्रमुख उद्देश्य है। शिक्षा स्वप्नों को साकार करने का साधन है। कलाम बच्चों को स्वप्न देखने हेतु प्रेरित करते हैं। उन्होंने कहा, “अगर स्वप्न ही नहीं होंगे तो क्रान्तिकारी विचार जन्म नहीं लेंगे और विचारों के न रहने से कोई कर्म भी सामने नहीं आएगा।

### शिक्षा का पाठ्यक्रम

डॉ० कलाम पाठ्यक्रम को शिक्षा का अभिन्न अंग मानते हैं। उचित पाठ्यक्रम के द्वारा ही शिक्षा के उद्देश्य की पूर्ति सम्भव है। उनके अनुसार पाठ्यक्रम में कुछ विशेषताएं अपेक्षित हैं। जैसे पाठ्यक्रम सैद्धांतिक ज्ञान के साथ-साथ उद्यम सम्बन्धी ज्ञान और कुशलता के विकास में पूर्ण रूप से समर्थ हों तभी शिक्षा वर्तमान युग में उपादेय हो सकेगी। वे स्कूल कालेजों और विश्वविद्यालयों के पाठ्यक्रम में प्रौद्योगिकी आधारित शिक्षण को प्रमुखता देने के पक्षधर हैं। उनके अनुसार पाठ्यक्रम छात्रों को सृजनात्मकता और अभिनव परिवर्तन की प्रवृत्ति का विकास करने में सक्षम होना चाहिए।

### विद्यालय की संकल्पना

डॉ० कलाम के अनुसार भारत को 2020 तक विकसित राष्ट्र में बदलने के स्वप्न जैसे लक्ष्य की प्राप्ति के लिए शिक्षण संस्थाओं में कुछ प्रमुख क्षमताओं का होना आवश्यक है जैसे – इक्कीसवीं शताब्दी का ज्ञान और सूचनाओं के प्रबन्धन की है जिसका विकास पिछली शताब्दियों में हुआ। अतः शिक्षण संस्थाओं को छात्रों में अनुसंधान तथा अन्वेषण क्षमता का विकास करने में सक्षम होना चाहिए। शिक्षा संस्थाओं द्वारा छात्रों में सृजनात्मकता और अभिनव परिवर्तन की क्षमता को विकसित किया जाना आवश्यक है। इसके विभिन्न आयाम जैसे – आविष्कार, खोज तथा नवीन प्रयोग हैं। शिक्षण संस्थाओं में डिजिटल लाइब्रेरी के द्वारा विद्यार्थियों को अपनी क्षमता बढ़ाने के लिए उपयुक्त वातावरण उपलब्ध होना चाहिए। विद्यालय का वातावरण विद्यार्थी के बहुमुखी व सर्वांगीण विकास में सहायक होना चाहिए। इस दृष्टि से वे विद्यालयों के स्वच्छ प्राकृतिक वातावरण के स्थापना के समर्थक थे।

### शिक्षक

डॉ० कलाम शिक्षक का मार्गदर्शन छात्र के लिए अपरिहार्य मानते हैं। उन्होंने शिक्षक को शिक्षा का केन्द्र बिन्दु माना है। शिक्षक एक प्रज्वलित दीपक के समान है जो सैकड़ों दीपकों को प्रज्वलित करता है। वे शिक्षक को बालकों का उत्तम मित्र मानते हैं। डॉ० कलाम शिक्षकों को बच्चों के विकास को आकार देने में उनकी भूमिका के महत्व को इन शब्दों में व्यक्त करते हैं, “आप केवल शिक्षक नहीं बने रह सकते, बल्कि आपको एक आदर्श में ढलना चाहिए, जिसका बच्चे सम्मान करें। “शिक्षा तथा अध्यापक छात्र सम्बन्ध को व्यापारिक दृष्टि से देखने के बजाय राष्ट्र के विकास को ध्यान में रखकर देखना होगा।”

## छात्र

डॉ० कलाम के अनुसार छात्रों का लक्ष्य सदैव उच्च कोटि का हो उन्हें ऊँचे स्वप्न देखने चाहिए। छात्रों को यह आधारभूत बात समझनी आवश्यक है कि वे ईश्वर द्वारा प्रदत्त जीवन की अच्छी चीजों को पाने के हकदार हैं। उन्हें विश्वास हो कि देश के जिम्मेदार व ज्ञानवान नागरिक बनने हेतु वे विकसित भारत के नागरिक बनने योग्य हैं। अध्यापकों एवं अभिभावकों के सहयोग से बच्चों का सार्वभौमिक मूल्यों पर आधारित सम्पूर्ण विकास आवश्यक है। डॉ० कलाम ने बच्चों से तीन बातें कही हैं – 1. पढ़ाई में अटल रहो, 2. किसी दूसरे को पढ़ाओ 3. पाँच पेड़ लगाओ।

## शिक्षण विधियाँ

डॉ० कलाम एक वैज्ञानिक होते हुए अन्तःकरण से शिक्षक हैं। उन्होंने अधोलिखित शिक्षण विधियों का संकेत दिया है— प्रदर्शन विधि, करके सीखो, मनोवैज्ञानिक विधि, स्वप्नदृष्टा बनने की प्रेरणा, अनुसंधान एवं योजना विधि एवं मनन विधि, क्रिया एवं अभ्यास विधि।

## अनुशासन

डॉ० कलाम प्रत्येक क्षेत्र में विभिन्न कार्यों में अनुशासन को महत्व देते हैं। अनुशासन व्यक्ति को महानतम शिखर पर प्रतिष्ठित करता है। आत्म नियन्त्रण का संदेश देने वाले कलाम दमनात्मक अथवा दण्डात्मक अनुशासन के समर्थक थे।

## दूरवर्ती शिक्षा

भारत जैसे विशाल जनसंख्या वाले देश में दूरवर्ती शिक्षा ही एक ऐसा तरीका है जिसके द्वारा राष्ट्र के प्रत्येक युवा हो उत्तम शिक्षा उपलब्ध हो सकती है। इतना ही नहीं सुदूर क्षेत्र में स्नातकोत्तर स्तर की शिक्षा देने के लिए अतिरिक्त शिक्षा के माध्यम से साक्षरता अभियान, अकुशल व्यक्ति को प्रशिक्षण एवं शिल्प कर्म को प्रोत्साहन दिया जा सकता है। उनके अनुसार ज्ञान की मशाल को देश के कोने कोने तक पहुँचाकर इसी के द्वारा देश में उपलब्ध मानव संसाधन को शिक्षित समाज में परिवर्तित करना सम्भव हो सकता है। उनके विचार से देश में दूरवर्ती शिक्षा कार्यक्रमों में कुछ तकनीकी घटकों को विकसित करने की आवश्यकता है। वर्तमान समय में संचार तकनीकी में आश्चर्यजनक वृद्धि हुई है। इससे दूरवर्ती शिक्षा कार्यक्रमों में वर्चुअल या सांकेतिक कक्षा को शामिल किया जा सकता है। इससे छात्र मात्र ध्यानपूर्वक सुनेंगे ही नहीं, बल्कि साथ ही अध्यापक से प्रश्न पूछना भी सम्भव होगा। परन्तु शिक्षक का योग्य व प्रतिभावान होना आवश्यक है। दूरवर्ती शिक्षा के द्वारा एक साथ किसी क्षेत्र की कई कक्षाओं को पढ़ाया जा सकता है।

## कृषि शिक्षा

डॉ० कलाम के विचार में बढ़ती जनसंख्या के लिए खाद्यान्न पूर्ति की समस्या का हल आधुनिक तकनीकी द्वारा सम्भव है। उनके अनुसार प्रत्येक भारतीय को पोषक और पर्याप्त भोजन उपलब्ध कराने व जरूरत के

समय खाद्यान्न निर्यात करने के लिए हमें 2020 तक 36 करोड़ टन खाद्यान्न की आवश्यकता होगी। इस मिशन के लिए शोध, तकनीकी और कृषि विस्तार में तथा उससे बढ़कर प्रबन्धन, भंडारण और वितरण में एक महान क्रान्ति लाना अपरिहार्य है। दूसरी हरित क्रान्ति से कृषि क्षेत्र में उत्पादकता बढ़ेगी। इसका उद्देश्य मिट्टी से बीज एवं उत्पादक से बाजार के बीच संतुलन स्थापित करना है।

### पर्यावरण शिक्षा

भौतिक विकास के लिए पर्यावरण की उपेक्षा निश्चित रूप से बारूद के ढेर पर महल खड़ा करने के समान है। पर्यावरण और पारिस्थितिकी आज विभिन्न पाठ्यक्रम के अंग बन गये हैं। ओजोन की परत, वैश्विक तापमान, जैविक विविधता एवं पर्यावरण प्रबन्धन, ऊर्जा के स्रोत जैसे विषयों पर प्रायः समाचार पत्रों, रेडियो, दूरदर्शन तथा पत्रिकाओं में जानकारियाँ प्रचारित व प्रकाशित होती रहती हैं।

पर्यावरणीय समस्याओं के निराकरण का एक मात्र उपाय है— पर्यावरण शिक्षा द्वारा जन जागरूकता के लिए अनवरत प्रयास हों। भारतीय संस्कृति में प्रकृति को परमेश्वर की शक्ति के रूप में माना गया है। परन्तु विकास की अन्धी दौड़ में हम पाश्चात्य जगत की भाँति प्रकृति को निर्जीव तथा मनुष्य को उपभोग की वस्तु मानकर औद्योगिक विकास की होड़ में इसका असीमित और असंतुलित दोहन कर आज हमने अपने ही सामने प्रदूषण और ऊर्जा संकट की विकराल समस्या खड़ी कर ली है।

### निष्कर्ष

डॉ० कलाम के शैक्षिक विचार, वर्तमान भारतीय शिक्षा व्यवस्था में आई विसंगतियों एवं उभरती हुई नवीन चुनौतियों का सामना करने में पूर्णतः सक्षम हैं। यदि भारतीय शिक्षा प्रणाली में डॉ० कलाम के शैक्षिक विचारों को क्रियान्वित किया जाये तो विश्व के समक्ष भारतीय प्रणाली को एक आदर्श के रूप में प्रस्तुत किया जा सकेगा।

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# शिक्षा में सूचना और संचार प्रौद्योगिकी

डॉ. गीता दहिया\*

## सारांश

विकास और तकनीकी ने मानव के शान्तिपूर्ण जीवन के लिये अनेक चुनौतियाँ प्रस्तुत की हैं, उन चुनौतियों से सामना करने के लिए भावी पीढ़ी को शिक्षित करने की आवश्यकता है साथ ही संचार के माध्यमों का उपयोग सांस्कृतिक आदान-प्रदान एवं अन्तरराष्ट्रीय सद्भावना को बढ़ाने के लिये सिखाना भी आवश्यक है। संचार के आधुनिक साधन ज्ञानवर्धक एवं मनोरंजन के लिए उपयुक्त हैं लेकिन यदि इनके उपयोग में सावधानी नहीं बरती जाए तो ये नैतिक पतन का कारण भी हो सकते हैं। इन चुनौतियों को शिक्षक अपने शिक्षण द्वारा ही समझा सकता है। नवीन पीढ़ी को शिक्षित करने हेतु शिक्षकों को आधुनिकता के साथ-साथ भारतीय संस्कार एवं नैतिक मूल्यों की ओर भी ध्यान देना होगा। ताकि हमारी पीढ़ी में शिष्टता, मानवता, नैतिकता, प्रेम, स्नेह, दया, करुणा आदि के गुणों से युक्त शिक्षा के द्वारा नवीन पीढ़ी में वैज्ञानिक स्वभाव का उद्विकास हो और वह अन्धविश्वास और दूषित परम्पराओं को नष्ट कर सके एवं स्वस्थ, विकासमय राष्ट्र का निर्माण कर सके।

**Key Words:** सूचना एवं संचार प्रौद्योगिकी

## भूमिका

प्राचीन काल से ही सूचना का महत्त्व रहा है। सूचनाओं के आदान-प्रदान हेतु लोग अलग-अलग तकनीकी अपनाने आये हैं। वर्तमान में यह प्रक्रिया बहुत आसान हो गई है।

पिछले कुछ दशकों से प्रौद्योगिकी ने हर संभव मार्ग से हमारे जीवन को पूरी तरह बदल दिया है। पहले लोगों को दूरदराज के क्षेत्रों में सूचना पहुँचाने में काफी समय लग जाता था। वही आज कुछ पल में यह कार्य आसानी से हो रहा है। हाल के वर्षों में इस बात में काफी रुचि रही है कि सूचना और संचार प्रौद्योगिकी को शिक्षा के क्षेत्र में कैसे उपयोग किया जा सकता है। शिक्षा के क्षेत्र में सूचना और संचार प्रौद्योगिकी के सर्वाधिक महत्त्वपूर्ण योगदानों में से एक है अधिगमयता पर आसान पहुँच संसाधन।

**सूचना प्रौद्योगिकी का प्रभाव-** सूचना प्रौद्योगिकी ने पूरी धरती को एक गाँव बना दिया है। इसने विश्व की विभिन्न अर्थव्यवस्थाओं को जोड़कर वैश्विक अर्थव्यवस्था को जन्म दिया है यह नवीन अर्थव्यवस्था अधिकाधिक रूप से सूचना के रचनात्मक व्यवस्था व वितरण पर निर्भर है। इसके कारण व्यापार और वाणिज्य में सूचना का महत्त्व अत्यधिक बढ़ गया है। सूचना क्रान्ति से समाज के सम्पूर्ण कार्यकलाप प्रभावित हुए हैं। धर्म, शिक्षा (e-learning), स्वास्थ्य (e-health), व्यापार (e-commerce), प्रशासन, सरकार सब के सब क्षेत्रों में कायापलट

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हो गया है। आज का समाज सूचना समाज कहलाने लगा है। आधुनिक युग में शिक्षा एवं कक्षा-कक्ष शिक्षा में गुणवत्ता, परिवर्तन तथा शैक्षिक अभियंत्रण तथा प्रबंधन में आने वाली विभिन्न समस्याओं के समाधान के विशिष्ट साधनों के रूप में सूचना एवं संचार तकनीकी का प्रयोग सफलता पूर्वक किया जा रहा है। आज पूरे विश्व में सूचना प्रौद्योगिकी का बोलबाला है अर्थात् मनुष्य ने तकनीकी दृष्टि से वृहद् स्तर पर प्रत्येक क्षेत्र में विकास किया है। तकनीकी विकास के कारण कोई भी कार्य असम्भव प्रतीत नहीं होता। विश्व स्तर पर कारोबार और परस्पर वार्ताएँ कोई भी कार्य असम्भव प्रतीत नहीं होता। विश्व स्तर पर कारोबार और परस्पर वार्ताएँ इस प्रकार होने लगी है जैसे स्थानीय स्तर पर हो। आज सात समन्दर पार बैठा व्यक्ति भी सब कुछ इस प्रकार कर रहा है जैसे सब कुछ उसके इर्द-गिर्द ही है।

सूचना ज्ञानार्जन का प्रथम सोपान होता है। इसके अभाव में कोई भी अध्ययन अनुसन्धान और विकास का कार्यक्रम सफल और सार्थक नहीं हो सकता। वर्तमान समाज के प्रत्येक क्षेत्र आर्थिक, सामाजिक, सांस्कृतिक, शैक्षणिक, औद्योगिक, स्वास्थ्य, चिकित्सा, कृषि, विज्ञान, प्रौद्योगिकी, जनसुरक्षा आदि सभी का आधार और विकास सूचना पर निर्भर करता है। सूचनाएँ, विवेक, बुद्धि, दक्षता, ज्ञान आदि पर प्रत्यक्ष प्रभाव डालती है। सूचना शब्द से तात्पर्य सन्देश, संकेत, प्रेरणा अथवा उत्तेजना से है। शिक्षा के परिपेक्ष्य में सूचना सम्प्रेषण तकनीकी की प्रभावशीलता शिक्षण एवं प्रशिक्षण में स्पष्ट रूप से दिखाई दे रही है।

**सूचना सम्प्रेषण तकनीकी, वह तकनीकी** है जो विश्व में किसी भी व्यक्ति के साथ कहीं भी घटित होने वाली घटना या प्रसंग के विशय में सम्पूर्ण ज्ञान उपलब्ध कराती है। इस तकनीकी ने शिक्षा के विकास की प्रक्रिया की गति को तेज कर दिया है तथा शैक्षिक संस्थानों में शिक्षण को नई दिशा प्रदान की है। सूचना सम्प्रेषण तकनीकी न केवल शिक्षा की गुणवत्ता में सुधार कर रही है बल्कि कक्षाओं के लिये श्रेष्ठ शैक्षिक सामग्री की उपलब्धता भी सुनिश्चित कर रही है।

वर्तमान में सूचना प्रौद्योगिकी के विकास के कारण छात्र-छात्राओं के ज्ञान में वृद्धि हुई है। पहले ग्रामीण परिवेश का छात्र अपने शैक्षिक जीवन में किताबी ज्ञान तक ही सीमित रहता था इतना ही नहीं प्राध्यापक और शिक्षकगण भी किताबों तक ही सीमित थे परन्तु आज दूरदर्शन व कम्प्यूटर के प्रवेश के कारण छात्रों और शिक्षकों की पहुँच राष्ट्रीय और अन्तर्राष्ट्रीय स्तर की बन चुकी है। सूचना प्रौद्योगिकी ने तो इस प्रकार पैर पसार है कि कम्प्यूटर के माध्यम से हम घर बैठे शिक्षा जगत में कितनी ही पाठ्य सामग्री का अध्ययन कर सकते हैं और ई-मेल जैसी सुविधा के तहत प्रश्न पूछकर उनके उत्तर प्राप्त करने से लेकर विस्तृत जानकारी भी प्राप्त की जा सकती है। सूचना व संचार प्रौद्योगिकी एक प्लंबिंग प्रणाली की तरह है जहाँ सूचना (संग्रहित पानी) सूचना प्रौद्योगिकी (भण्डारण टंकी) में संचालित होती है तथा संचार प्रौद्योगिकी (पाइप) के माध्यम से संचार (बहता हुआ पानी) प्रापक के पास पहुँचता है।

## सूचना एवं संचार प्रौद्योगिकी के घटक

सूचना एवं संचार प्रौद्योगिकी के विभिन्न घटक हैं—

- **कम्प्यूटर हार्डवेयर प्रौद्योगिकी-** इसके अन्तर्गत माइक्रो कम्प्यूटर, सर्वर, बड़े मेनफ्रेम कम्प्यूटर के साथ-साथ इनपुट, आउटपुट एवं संग्रह करने वाली युक्तियाँ आती हैं।



- **कम्प्यूटर साफ्टवेयर प्रौद्योगिकी-** इसके अन्तर्गत ऑपरेटिंग सिस्टम वेबब्राउजर डाटाबेस प्रबन्धन प्रणाली, सर्वर तथा व्यापारिक, वाणिज्यिक साफ्टवेयर आते हैं।
- **दूरसंचार व नेटवर्क प्रौद्योगिकी-** इसके अन्तर्गत दूर संचार के माध्यम, प्रोसेसर तथा इंटरनेट से जुड़ने के लिये तार या बेतार पर आधारित साफ्टवेयर नेटवर्क सुरक्षा, सूचना का कूटन (किप्टोग्राफी) आदि हैं।
- **मानव संसाधन-** तंत्र प्रशासक, नेटवर्क प्रशासक आदि।

## शिक्षा में सूचना व संचार प्रौद्योगिकी का उपयोग

आज किसी भी राष्ट्र के संसाधनों को उपयुक्त उपयोगी उत्पादों में परिवर्तित करने में सूचना एक संसाधन के रूप में अत्यधिक महत्वपूर्ण भूमिका का निर्वाह करती है। अर्थात् सूचना व्यवहार एक उद्योग की तरह विकसित किया जा रहा है इसलिए लोगों का जीवन स्तर सुधारने में भी सूचनाएँ महत्वपूर्ण स्थान रखती हैं। हम कह सकते हैं कि, कोई भी देश जिसके पास सूचना रूपी संसाधन है, वह निश्चित अन्य देशों की तुलना में उन्नतशील एवं विकसित देश है। भारत एक सफल सूचना और संचार प्रौद्योगिकी से सज्जित राष्ट्र होने के नाते सदैव सूचना और संचार प्रौद्योगिकी के उपयोग पर अत्यधिक बल दे रहा है।

आधुनिक युग में उपलब्ध बहुप्रौद्योगिकी के वरदान जैसे— मोबाइल फोन, टैबलेट तथा लैपटॉप एवं कम्प्यूटर द्वारा विद्यार्थी, शिक्षक, शिक्षाविद् तथा अभिभावक ई-पुस्तकों को प्राप्त कर सकते हैं। ई-पाठशाला आपके मोबाइल की तकनीक और भंडारण क्षमता के अनुसार एक साथ अनेक ई-पुस्तकों तथा अन्य सामग्रियों की उपलब्ध कराने में सक्षम है। ई-पुस्तकों की मुख्य विशेषताएँ हैं— पृष्ठों को चुनना, पृष्ठों को पढ़ना, उन्हें छोटा-बड़ा करना, पाठों को रेखांकित व चिह्नित करना, पाठ खोजना, रात्रि पठन तथा डिजिटल नोट तैयार करना आदि में सहायक है। एन.सी.आर.टी. ने एक ई एप बनाया है जिसे एंड्रॉयड, आई फोन ऑपरेटिंग सिस्टम तथा विंडोज की सहायता से उपयोग कर सकते हैं। ई-पाठशाला तीन भाषाओं में उपलब्ध है हिंदी, अंग्रेजी और उर्दू। इस एप में विद्यार्थी, शिक्षक, अभिभावक, प्रतिभागी अपने ज्ञान का वर्द्धन कर सकते हैं। यह एप ई-पाठशाला, ई-बुक, ई-लर्निंग इत्यादि नामों से मिलती है। भारत के प्रधानमंत्री श्री नरेन्द्र मोदी ने भी अलवर के शिक्षक श्री इमरान खान को भी ऐसे ई-लर्निंग एप बनाने के लिए लंदन के वेम्बले स्टेडियम में नवम्बर 2015 में बधाई देते हुए कहा था कि “मेरा भारत अलवर के इमरान खान में है”। यह बधाई संदेश उनके द्वारा बनाये गये 52 ई-लर्निंग एप्स के लिए दी गई क्योंकि यह एप्स छात्रों के लिए बहुत लाभदायी हैं।

सूचना संचार प्रौद्योगिकी क्रान्ति ने ज्ञान के नये द्वार खोल दिए हैं। बुद्धि एवं भाषा के मिलाप से सूचना प्रौद्योगिकी के सहारे आर्थिक समानता की ओर भारत में इसका क्षेत्र तेजी से विकसित हो रहा है। इस क्षेत्र में विभिन्न प्रयोगों का अनुसंधान करके विकास की गति को बढ़ाया गया है।

शिक्षा का क्षेत्र भी अत्यन्त महत्वपूर्ण हो। देश की रचनात्मक तथा विकासात्मक अवस्था के मूल में शिक्षा ही होती है। “शिक्षक कभी भी पूर्ण नहीं होता, उसे ज्ञान ग्रहण करने के लिए हमेशा तत्पर रहना चाहिए” इसलिए शिक्षक को भी तकनीकी का ज्ञान अत्यन्त उपयोगी है। आजकल सूचना क्रान्ति में मानव जीवन के प्रत्येक पहलू को अत्यधिक प्रभावित किया है। इस सूचना क्रान्ति ने भविष्य में अनेक चुनौतियाँ, अवसरों एवं प्रतिस्पर्धाओं का सृजन किया है जिनके साथ सामंजस्य स्थापित करने के लिये सूचना एवं संचार प्रौद्योगिकी

का अध्ययन करना अनिवार्य हो गया है। संचार प्रौद्योगिकी को कम्प्यूटर के नित नए विकास ने और अधिक प्रभावी बना दिया तथा विस्तृत आयाम प्रदान किया है।

### शिक्षा में सूचना-सम्प्रेषण तकनीकी की आवश्यकता एवं महत्व

- (ICT) शिक्षण प्रक्रिया को वैज्ञानिक, वस्तुनिष्ठ, स्पष्ट, सरल, रुचिकर व प्रभावशाली बनाती है।
- (ICT) शिक्षक एवं विद्यार्थियों के मध्य विचारों के आदान-प्रदान में सम्प्रेषण को प्रभावशाली बनाती है।
- (ICT) विद्यार्थियों के लिए ध्यान केन्द्रित करने का उत्तम साधन है इसका उपयोग छात्र छात्राओं के अधिगम स्तर को सरल तथा सुगम बनाने में किया जाता है। दिन-प्रतिदिन शिक्षा की बढ़ती जरूरतों को पूर्ण करने में सूचना-सम्प्रेषण तकनीकी का अहम योगदान रहा है।
- (ICT) शैक्षिक समस्याओं के समाधान के लिये उचित मार्गदर्शन प्रदान करती है। जैसे लक्ष्यों का निर्धारण करना, छात्रों के प्रारम्भिक व्यवहार की जाँच करना, पाठ्यवस्तु का चयन व आयोजन करना, उचित शिक्षण विधियों व व्यूह रचनाओं तथा सहायक सामग्रियों का चुनाव व आयोजन करना आदि से शिक्षण अधिगम प्रक्रिया को प्रभावशाली बनाती है।

### सुझाव

- शिक्षण/ अधिगम में (ICT) के उपयोग को कम महत्वपूर्ण माना जाता है। योजना द्वारा इसकी महत्ता बनाई जाए।
- (ICT) द्वारा शैक्षिक प्रबन्ध एवं प्रशासन की भूमिका का निर्धारण कर कार्य किये जाए।
- ग्रामीण क्षेत्रों में उन्नत प्रौद्योगिकी तथा प्रबन्धकीय जनशक्ति की बेहद आवश्यकता है। सरकार को इस और अपना ध्यान केन्द्रित करना चाहिए।
- (ICT) देश के उन्नत विद्यालयों में है। बहुत कम शिक्षकों को इसका ज्ञान है। व्यवस्था में सुधार कर अन्य शिक्षकों को प्रशिक्षित किया जाए।
- वर्तमान और उभरती तकनीकी दोनों में सतत शिक्षा को प्रोत्साहन दिया जाए। इस हेतु पृथक से केन्द्र भी बनाया जाये।
- भारत कृषि प्रधान राष्ट्र है। ग्रामीण क्षेत्रों में संचालित होने वाली संस्थाओं में (ICT) हेतु पर्याप्त व्यवस्थाओं का निरूपण होना चाहिए ताकि नवीन व्यवस्था से सभी विद्यार्थियों को लाभ मिल सके।
- (ICT) प्रोग्राम स्कूल स्तर से ही बड़े पैमाने पर आयोजित किए जाए तथा प्रत्येक संस्था में प्रशिक्षण प्राप्त शिक्षकों द्वारा शिक्षण होना चाहिए।
- शिक्षा महाविद्यालयों में (ICT) का सैद्धान्तिक एवं व्यावहारिक ज्ञान व्यवस्थित रूप से दिया जाये, अभी तक यह सतही तौर पर किया जा रहा है।
- पाठ्यक्रम को अद्यतन बनाने एवं आवश्यकताओं को पूरा करने एवं नवीनीकरण द्वारा नये सिरे से कार्य शुरू करना चाहिये।
- व्यवसायिक शिक्षा के विस्तार में (ICT) पाठ्यक्रम को पढ़ाने के लिये पेशेवर प्रशिक्षित शिक्षकों की आवश्यकता की पूर्ति की और सरकार को ध्यान देना चाहिए।

आधुनिक युग को सूचना सम्प्रेषण तकनीकी (ICT) क्रान्ति का युग कहा जाता है। सूचना सम्प्रेषण तकनीकी ने मानव जीवन के प्रत्येक पक्ष को प्रभावित किया है। सूचना के बिना मानव जीवन शून्य नजर आता है। इनसे शिक्षा, शिक्षण तथा अधिगम भी प्रभावित हुये है, शिक्षा के क्षेत्र में नवीन अनुसंधानों, खोजो एवं अन्वेषणों के फलस्वरूप ऐसी-ऐसी तकनीकी कौशलों का विकास किया गया है, जिससे शिक्षा के उद्देश्यों को प्राप्त करने में पर्याप्त सहायता मिल रही है।

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# बौद्ध धर्म और सामाजिक परिवर्तन

सुरेन्द्र कुमार नेहरा\*

## सारांश

बौद्ध धर्म का प्रतिपादन गौतम बुद्ध द्वारा किया गया। गौतम बुद्ध का बचपन का नाम सिद्धार्थ था। जिनका जन्म उत्तर भारत के कपिलवस्तु राज्य में 1563 ई.पूर्व की वैशाख पूर्णिमा के दिन राजा शुद्धोधन के घर, माता महामाया की कोख से लुंबिनी वन में हुआ। सिद्धार्थ को राजा शुद्धोधन ने सभी सुख वैभव दिए परंतु सिद्धार्थ का मन संसारिक सुख-सुविधाओं में नहीं लगा और वह बीमार, बुढ़े और रोगी व्यक्ति को देखकर बहुत दुखी हुआ और हमेशा इनके निवारण के उपाय सोचने लगा। लेकिन दण्डपाणि नामक एक शाक्य की लड़की यशोधरा से सोलहवें वर्ष में उनका विवाह हुआ और रानी यशोधरा ने राहुल नाम का एक पुत्र को जन्म दिया। सिद्धार्थ ने बड़े नम्रता पूर्वक अपने पिताजी से निवेदन किया कि आपको आप के पुत्र का जन्म हो चुका है। अतः आप मुझे गृह त्याग की आज्ञा दीजिए क्योंकि अब मेरा मन इन भोग विलास की वस्तुओं में नहीं लगता। अब मुझे संसार त्याग की भावना और वैराग्य की भावना से परिपूर्ण तिरंगे गृह त्याग के लिए विवश करने लगी हैं। अतः मुझे जन्म, जरा, मरण, व्याधि के दुख दूर करने की चिंता मुझे व्याकुल करती है। इस प्रकार, सिद्धार्थ गृह त्याग के बाद भृगु आश्रम गए। वहां से वह आलार कालाम के पास पहुंचे। अंत में, तपस्या की और बोधगया में एक पीपल के वृक्ष के नीचे ध्यानमग्न हो गए वहीं और उन्होंने दुख के निर्माण का ज्ञान प्राप्त कर लिया और बोधिसत्व कहलाए, बुद्ध बन गए। इस प्रकार उन्हें, दुरुख कौन-कौन से हैं? क्यों हैं? और इन दुरुखों का अंत किस प्रकार किया जाए?

इन सभी प्रश्नों के उन्हें सही-सही उत्तर मिल गए थे। जिन्हें श्रृंखला सम्यक् संबोधिश् कहा जाता है। इसी ज्ञान प्राप्ति के पश्चात ही सिद्धार्थ, श्रृंगौतमबुद्धश् कहलाए। सिद्धार्थ ने जो ज्ञान प्राप्त हुआ और जो उसे उपदेश ने जनता को दिया। उन सबका सार चार सत्यों द्वारा दर्शाया जाता हैय

- दुरुख
- दुरुख समुदय
- दुरुख निरोध
- दुरुख निरोध मार्ग

जरा, रोग, मृत्यु, अप्रिय का संयोग, प्रिय का वियोग, इच्छा की पूर्ति का न होना, जय-पराजय भी सभी दुरुख है। जिनकी उत्पत्ति आसिक्त से होती है। बुद्ध ने निष्कर्ष दिया कि सुख ही वास्तव में दुरुख है। दुरुखों के वर्णन के बाद बुद्ध ने दुख का मूल कारण तृष्णा को बताया। उनके अनुसार तृष्णा अज्ञान

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के कारण पैदा होती है और अज्ञान के दूर हो जाने मात्र से तृष्णा समाप्त हो जाती है। अतः दुख का मूल कारण तृष्णा ही है। इस प्रकार, अज्ञानता ही दुख का मुख्य एवं मूल कारण है। बुद्ध ने बताया कि इसको दूर भी किया जा सकता है। अंतिम सत्य में बुद्ध ने दुख को दूर करने के आठ मार्ग बताए, जिन्हें श्रष्टांगिक मार्ग कहा जाता है।

### श्रष्टांगिक मार्ग

1. सम्यक् दृष्टि
2. सम्यक् संकल्प
3. सम्यक् वाक्
4. सम्यक् कर्म
5. सम्यक् आजीव
6. सम्यक् व्यायाम
7. सम्यक् समृति
8. सम्यक् समाधि

भगवान बुद्ध ने पुनर्जन्म के सदाचारों को व्यक्त करने के लिए श्रजातक ग्रंथ के रूप में जिसमें 547 कथाओं का संग्रह दिया है। जिनका शिक्षा के क्षेत्र में बहुत महत्व है। द्वादश निदान हमारे भूत, वर्तमान और भविष्य के जीवन में व्यापक हैं। पूर्वजन्म के संस्कारों और कर्मों के परिणामस्वरूप ही हमें वर्तमान का जीवन मिला है और वर्तमान जीवन में हम जिन संस्कारों और कर्मों का निर्माण कर रहे हैं, उनके कारण ही भविष्य में पुनर्जन्म ले पाना संभव है। प्रतीत्य समुत्पाद की इस सारी योजना का आधार अविद्या है। प्रतीत्य समुत्पाद का अर्थ है एक वस्तु का दूसरी वस्तु पर निर्भर होना अर्थात् इसकी होने पर वह होता है या इसकी उत्पत्ति से उसकी उत्पत्ति होती है। द्वादश(बारह) निदान इस प्रकार है

1. अविद्या
2. संस्कार
3. विज्ञान
4. नामरूप
5. षडायतन
6. स्पर्श
7. वेदना
8. तृष्णा
9. उपादान
10. भव
11. जाति
12. जरा—मरण

## सामाजिक परिवर्तन

मनुष्य एक सामाजिक प्राणी है। वह समाज के बिना नहीं रह सकता परंतु समाज गतिशील है। यह सदा ही परिवर्तन की स्थिति में रहता है। परिवर्तन प्रकृति का नियम है। संसार में परिवर्तन के अतिरिक्त कुछ भी स्थाई नहीं है। पंडित जवाहरलाल नेहरू जी ने ठीक ही कहा था, मानव जीवन में निरंतर परिवर्तन आज के समय का मूल तत्व है। (The basic fact of today is the tremendous pace of change in human life) कवि टेनीसन ने ठीक ही कहा है, "पुराना कर्म परिवर्तित होकर नवीन को स्थान देता है।" कनेडी के शब्दों में, "समय तथा संसार स्थिर नहीं रहते हैं। परिवर्तन जीवन का नियम है और वह जो केवल अतीत तथा वर्तमान की ओर देखते हैं, निश्चित ही अपने भविष्य को खो देते हैं।" "सामाजिक परिवर्तन का सांस्कृतिक विलम्बना का सिद्धांत प्रमुख समाजशास्त्री ऑगबर्न ने अपनी पुस्तक 'Social Change'(1922) में दिया और उद्विकास, प्रगति और सामाजिक परिवर्तन तीनों का अलग-अलग अर्थ स्पष्ट किया।

## परिभाषा

किंग्सले डेविस के अनुसार, "सामाजिक परिवर्तन में केवल वे ही परिवर्तन समझे जाते हैं जो सामाजिक संगठन अर्थात् समाज के ढांचे और समाज की क्रिया में होते हैं।"

ग्रीन के अनुसार, "सभी वस्तुएँ परिवर्तन के बहाव में हैं।"

जेन्सन के अनुसार, "सामाजिक परिवर्तन लोगों के कार्य करने की पद्धतियों के संशोधन का नाम है।"

गिलिन एवं गिलिन के अनुसार, सामाजिक परिवर्तन जीवन के स्वीकृत ढंग से भिन्न है। यह भिन्नता भौगोलिक परिस्थितियों, सामाजिक उपलब्धियों, जनसंख्या, विचारधाराओं तथा समूह के समय के आविष्कार के कारण पैदा होती है। जिन्सबर्ग के अनुसार, "सामाजिक परिवर्तन से मेरा अभिप्राय सामाजिक संरचना में परिवर्तन से है। यह परिवर्तन समाज के आकार, रचना, विभिन्न भागों में संतुलन व संगठन के प्रकार में हो सकता है।"

मैकाइवर और पेज के अनुसार, "समाज परिवर्तनशील एवं गत्यात्मक है।" समाजशास्त्री होने के नाते हमारी विशेष रुचि प्रत्यक्ष रूप से सामाजिक संबंधों में है केवल इन सामाजिक संबंधों में होने वाले परिवर्तन को हम सामाजिक परिवर्तन कहते हैं।

टेनीसन के अनुसार, "प्राचीन क्रम में नए को स्थान देने के लिए परिवर्तन होता है।"

## सामाजिक परिवर्तन की विशेषताएं

- सामाजिक परिवर्तन, सामाजिक ढांचे एवं प्रक्रिया में होने वाले परिवर्तन है।
- सामाजिक परिवर्तन का संबंध किसी व्यक्ति विशेष से न होकर बल्कि समाज के सभी लोगों के जीवन निर्वाह विधि में परिवर्तन से है।
- सामाजिक परिवर्तन का संबंध मानव के सामाजिक संबंधों में परिवर्तन से है।
- सामाजिक परिवर्तन की प्रकृति सामाजिक होती है।

- सामाजिक परिवर्तन स्वभाविक एवं अनिवार्य है।
- सामाजिक परिवर्तन की भविष्यवाणी नहीं की जा सकती।

### प्रतिमान

मैकाइवर एंड पेज ने सामाजिक परिवर्तन के तीन प्रमुख प्रतिमाओं का वर्णन किया है। प्रथम प्रतिमान इस प्रकार के परिवर्तन की दिशा एक सीधी रेखा के रूप में होता है, जिसे इसे रेखीय परिवर्तन भी कहा जाता है। इसका उदाहरण औद्योगिक परिवर्तन एवं वैज्ञानिक उन्नति है।

द्वितीय प्रतिमान इस प्रकार के प्रतिमान में परिवर्तन कभी अधिक और कभी कम अथवा ऊपर-नीचे होता रहता है। इस प्रकार इसे उतार-चढ़ाव वाला या तरंगीय परिवर्तन भी कहा जाता है। इस प्रकार का परिवर्तन आर्थिक क्रिया एवं जनसंख्या के क्षेत्र में पाया जाता है।

तृतीय प्रतिमान इस प्रकार के प्रतिमान में परिवर्तन एक चक्र के रूप में होता है अर्थात् जहाँ से शुरू होता है, वही पर आकर खत्म होता है। इसलिए इसे चकीय परिवर्तन भी कहते हैं। जैसेरु भारत में ऋतु चक्र। इस प्रकार का परिवर्तन संस्कृति, सामाजिक मूल्य, फैशन आदि के क्षेत्र में पाया जाता है।

### सामाजिक परिवर्तन की प्रक्रिया

(व्यक्तियों के अनुभव में परिवर्तन)

(व्यक्तियों के दृष्टिकोण में परिवर्तन)

(व्यक्तियों की चिंतन प्रवृत्ति में परिवर्तन)

(सामाजिक अंतरक्रिया में परिवर्तन)

(सामाजिक संबंधों में परिवर्तन)

(सामाजिक संरचना में परिवर्तन)

(सामाजिक परिवर्तन)

### निष्कर्ष

बौद्ध धर्म अर्थात् गौतम बुद्ध द्वारा दिखाया गया रास्ता, समाज परिवर्तन में महत्वपूर्ण भूमिका निभाता है। कोई भी समाज गौतम बुद्ध द्वारा किए गए मार्गदर्शन को अपनाकर अपने आप में सार्थक परिवर्तन ला सकता है। गौतम बुद्ध ने अपने विचारों के केन्द्र में मात्र मानव कल्याण को ही स्थान दिया और उनके लिए

नए-नए उपाय खोजते रहे। उन्होंने इसके लिए सर्वाधिक बल नैतिकता पर दिया। क्योंकि उनका मानना था कि नैतिकता के माध्यम से ही व्यक्ति के अंदर और समाज के मूल्यों की स्थापना की जा सकती है। उन्होंने आह्वान किया कि शांत से क्रोध को जीतो, साधु से असाधु को जीतो और मृषावादी को सत्य से जीतो। उन्होंने अध्यात्मशास्त्रीय प्रश्नों पर मौन रहकर, उन्हें अव्याकृत कह कर टाल दिया था। उन्होंने इंद्रिय के संयम पर बल दिया। इंद्रियों पर संयम स्थापित रखने के लिए उन्होंने दसशील का विधान बनाया था। इन्हीं शीलों तथा नियमोपनियमों द्वारा बौद्ध दर्शन व्यक्ति और समाज के नैतिक मूल्यों की स्थापना करने में सार्थक साबित हो सका। बौद्ध धर्म, आज भारत के साथ-साथ चीन, श्रीलंका, मंगोलिया, जापान, कोरिया, मलाया, बोरिया आदि देशों में भी फल-फूल रहा है। परंतु भारत में इनका यह सिकुड़ता जा रहा है।

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## गाँधीजी के विचार : ग्रामोद्योग के अछूत परिप्रेक्ष्य में

डॉ. कुमोद कुमार

गाँधीजी के लिए आधुनिक युग में राजनीतिक में संलिप्त होना हर भारतीय का कर्तव्य था। राजनीतिक दिलचस्पी का उद्देश्य नीचे चर्चित तर्ज पर भारत का पुननिर्माण करना था। इसलिए राजनीतिक संलिप्तता ने कई रूप ले लिए और यह विभिन्न स्तरों पर सामने आया। हलांकि स्वतंत्रता संघर्ष में शामिल होना निश्चित रूप से महत्वपूर्ण था। वह सबसे महत्वपूर्ण नहीं था। चूँकि राष्ट्रीय पूर्ण निर्माण के बिना आजादी सिर्फ औपचारिकता थी और उसका कोई अर्थ नहीं था। गाँधीजी के मत में असली राजनीतिक गाँवों में काम करते हुए, अन्याय के खिलाफ लड़ते हुए लोगों में साहस और आत्मसम्मान उत्पन्न करने में मदद करते हुए, भारतीय समाज, संस्कृति और चरित्र को नया जीवन देने में निहित थी। भारत के पुनउत्थान में योगदान देने वाली और उसे न्यायपूर्ण और संबद्ध बनानेवाली हर क्रिया राजनीतिक प्रकृति की थी।

गाँधी जी हिंसा नीति के चलते किसानों की हालत को जाँच करना चाहता था। नील के मालिकों के विरुद्ध जो शिकायतें थी। उनमें कितनी सच्चाई है यह देखना चाहता था। इस काम के लिए हजारों किसानों से मिलने की जरूरत थी। किन्तु उनके सम्पर्क में आने से पहले मुझे यह आवश्यक मालूम हुआ की मैं नील के मालिकों की बात सून लूँ और कमिशनर से मिल लूँ।

महात्मा गाँधी के विचारों की उपयोगिता तो जीवन के प्रत्येक क्षेत्र में दिखाई पड़ती है किन्तु गाँव और ग्रामीण जनता के जीवन को उन्होंने अपना मुख्य कार्य क्षेत्र चुना। उन्होंने इस बात को अच्छी तरह समझ लिया था कि गाँवों को आत्म निर्भर बनाए बिना सच्चा स्वराज हासिल नहीं किया जा सकता। इस सपने का साकार करने के लिए उन्होंने ग्राम वाद, ग्रामीण स्वराज, उद्योगिक विकेन्द्रीकरण, शारिरिक श्रम की प्रतिष्ठा समाजिक समर सत्ता, ट्रस्टीशिप, सर्वोदय एवं सहकारिता जैसे महान आर्थिक विचारों को जन्म दिया।

गाँधीजी को मानव इतिहास के कुछ महानतम विचारकों ने उनकी जीवन को एक पाठशाला और इतिहास को मानव जाति की शिक्षा के रूप में देखा है। अगर ऐसा है, तो लगता है कि मनुष्य हाल में इसके उच्च स्तर में आ गया है, जहाँ उससे दो अत्यंत कठिन समस्याओं से जूझते हुए सीखने की उम्मीद की जाती है।, ये समस्याएँ नई नहीं है, लेकिन पहले मनुष्य के लिए इनसे बचना मुमकिन था, अब ऐसा मुमकिन नहीं है।

लोगों को गाँधी जी के अछूत का वहम लग गया है। किसी ने लिख दिया कि सात करोड़ अछूत है। सबलोग "कौवा कान ले गया, कौवा कान ले गया" के अनुसार इसको भी मान बैठे है। कोई नहीं सोचता कि वास्तव में कितना अछूत है ? कहाँ से आए ? कितनी निर्धन जातियाँ है, सभी अछूत है, शास्त्रों में अत्यंत जातियों का वर्णन आया है। अत्येसामी में धोबी, मल्लाह, मोची, रंगरेज, नट आदि के विषय में लिखा है कि यदि इनसे छू जाओ तो आचमन कर लो। उनका जो छूतपन है, उसका दोष इससे नष्ट हो जाएगा। ऐसे लोगों को भी हमारे मित्रों ने अछूत कह दिये, यद्यपि आचमन मात्र से इनकी शुद्धि हो जाती है। धोबी जो कपड़े धोकर लाता है, क्या आप उसे नहीं पहनते है। दुनियाँ में ऐसे भी प्राणी हैं जो शौच होने के लिए जाते

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हैं आकर नहाते हैं। क्या ऐसे लोग अगर किसी से छू जाएँ और आचमन कर लें तो किसी को शिकायत करने का मौका हो सकता है वह जो कराते हैं, उन्हें करने दो। शास्त्रों में चांडाल, डोम और रजस्वला स्त्री के विषय में लिखा है कि उनको जो छू जाए वह स्नान करें। मैं आपको यही दिखला रहा हूँ कि लिखा है अवश्य किन्तु इसके साथ यह भी लिखा है कि तीर्थ, यात्रा, देवालय, सड़क आदि में तथा नगर में आग लगने के अवसर पर छुआछूत का विचार नहीं होता। जहाँ अलग करना चाहते हैं, करे। किन्तु जहाँ यह सम्भव नहीं, वह मत करो। तीर्थ पर कोई छुआछूत नहीं होती। तीर्थराज प्रयाग में घूमा हूँ। वहाँ पर स्नान करके हम भी निकलते हैं और भंगी भी, सबको वहाँ समान अधिकार है, किसी को छू जाने का दोष नहीं। इसी प्रकार संग्राम में आग लगने के समय, बाजार में देवता के घर कोई छूत नहीं है।

गाँधीजी कहते थे कि महापुराण में लिखा है कि मंदिर में जो मूर्ति है, उसका दर्शन करने वाले को पृथ्वी का सब फल मिल जाता है। आज मिल का उदाहरण है। इस पुराण में लिखा है कि भगवान के सामने जो ऊँचे स्वर से भजन करता है, नाचता है, वह जगत को पवित्र करता है। हमारे पूर्वज ने समझ लिया कि कलयुग आनेवाला है। इसलिए संभलकर उन्होंने मार्ग बना दिया। 24 करोड़ में से 3 करोड़ ब्राह्मण, क्षत्रिय, वैश्य हैं, बांकी 21 करोड़ शुद्र हैं। इनमें थोड़े से जो भंगी हैं, वे अछूत हैं। बांकी सब मंदिर में जाते हैं। अछूत मंदिर नहीं जाते हैं।

गाँधीजी के केन्द्रीय हिन्दू समिति ने कहा कि हम मानते हैं कि हिन्दू समाज के विभागों में किसी हीन भावना का कोई सवाल नहीं है। इस देश के करुणामय और मानवता वादी ऋषियों ने जो परम्पराएँ स्थापित की हैं, उनकी इतनी शताब्दियों से पालन करने वाले रूढ़िवादी हिन्दुओं ने कोई पाप नहीं किया। देश के कई स्थानों में सवर्ण हिन्दुओं की भी ऐसी काफी बड़ी संख्या है जो आर्थिक और सांस्कृतिक दृष्टि से पाँचों में से कहीं ज्यादा खराब स्थिति में है। रूढ़िवादी हिन्दू का पहला सिद्धांत है कि भूखों को हमेशा भोजन दान किया जाय और उसे वह हमेशा अपना धार्मिक कर्तव्य मानता है और ईश्वर से उसकी पहली प्रार्थना यही रही है कि मानव मात्र का कल्याण हो।

गाँधीजी ने इसे अपने प्रति उत्तर के लिए खास तौर से चुने थे। गाँधी जी के रूढ़िवादी आलोचकों ने उनपर सरकार और विधायिका से असहयोग के बजाय सहयोग करने का आरोप लगाया। उन्होंने गाँधी से पूछा कि आप तो सदैव सरकार और विधायिका से असहयोग की बात करते थे, पिफर जेल में बैठे-बैठे और सरकार की सक्रिय सहायता से वर्तमान विधान मंडल में अस्पृश्यता विरोधी विधेयकों को पारित करने के लिए यह प्रचार कार्य क्यों कर रहे हैं। इसका सटीक उत्तर देते हुए गाँधीजी ने लिखा कोई भी सिद्धांत सभी परिस्थितियों में एक ही तरह से लागू नहीं किया जा सकता था।

गाँधीजी को हिन्दू समाज में छूवा छूत की भावना को देखते हुए हरिजन में एक टिप्पणी प्रकाशित हुई। उसमें उन्होंने निजी और सार्वजनिक उपवास के साधन पर अपना गहरा विश्वास प्रगट करते हुए लिखा यह पूर्ण आत्मत्याग है। यह सर्वोत्तम प्रार्थना है। मेरा जीवन ले लो यह सदा तेरे और केवल तेरे लिए है, कि पुकार मुख से निकलने वाली निरर्थक या प्रतीकात्मक बात नहीं होनी चाहिए। यह बिना किसी हिचकिचाहट के अपने आपको बैफिक्र होकर सहर्ष समर्पित कर देने की भावना से युक्त होनी आवश्यक है। भोजन और यहाँ तक कि जल का त्याग भी केवल उसकी शुरुआत है। यह तो समर्पण का सबसे कम महत्वपूर्ण पक्ष है।

गाँधी अपने को व्यवहारिक आदर्शवादी मानते थे। यह उनके व्यक्तित्व की मुख्य विशेषता है। व्यवहारिक आदर्श वादी एक-एक कदम सोच-समझकर उठाता है। उसे अपने देश, समाज और अनुयायियों का ध्यान रखना पडत्रता है। भारत में तो और भी ज्यादा। जहाँ रुढ़ियाँ, अंधविश्वास और कई प्रकार की विषमताएँ हावी थी, आज भी हावी है। इन परिस्थितियों में सबके साथ लेकर चले बिना स्वराज की लड़ाई नहीं लड़ी जा सकती थी। इस विषमता से गाँधीजी बहुत हद तक परम्परावादी प्रतीत होते हैं। जीवन के आखरी दौड़ को छोड़कर वे आजीवन वर्ण व्यवस्था का समर्थन करते रहे। कहते रहे कि वर्णाश्रम और स्पृश्यता में कोई संबंध नहीं है। 1931 में नासिक कला राम मंदिर में अस्पृश्यों के प्रवेश के लिए सत्याग्रह के बारे में भी गाँधी जी का यह मत था कि यह सत्याग्रह अछूतों को नहीं, स्पृश्यों को करना चाहिए।

गाँधीजी ने भारतीय समाज के पददलितों को 'दलित' कहने के बजाय 'हरिजन' कहा। गाँधीजी छुआछूत जरूर मिटाना चाहते थे, किन्तु हस हेतु वे 'स्वराज्य' आंदोलन के लिए बनाए गए भारतीय जनता के मोर्चे में न तो दरार आने देना चाहते थे और नही इसके बहाने अंग्रेज सरकार को भारत में बने रहने के लिए मुहलत देना चाहते थे। गाँधीजी अछूतों के हिन्दू समाज से अलग होने की बात से भी सहमत नहीं थे इससे उन पर "अंत विरोधी" रूख लेने की तोहमत भी लगी कि उन्होंने मुसलमानों और सिक्खों को तो अल्पसंख्यक होने के नाते विशेष अधिकार देना स्वीकार कर लिया। किन्तु अस्पृश्यों के लिए पृथक निर्वाचक मंडल बनाने के विरोध में आमरन अनशन पर बैठ गए।

आधुनिक भारत की त्रासदी यह है कि सुविधा-भोगी अभिजात वर्ग कभी गांधीवादी दर्शन का सार नहीं समझ सकता। सामाजिक न्याया और स्थायित्व की हमारी चाह एक सपना बनकर रह जाएगी। जब तक कि हमें गाँधीजी के इन शब्दों का अर्थ समझ में नहीं आएगा। "वह मिथ्या अर्थव्यवस्था है जो नैतिक मूल्यों को अनदेखा और उनकी अवहेलना करती है।" गाँधीजी का यह विश्वास था कि लोकतांत्रिक विकेन्द्रीकरण और ग्रामीण विकास के बिना भारत की जनता के लिए आजादी का कोई अर्थ नहीं है। उन्होंने आजादी के संघर्ष के दौरान लगातार अपने भाषणों और लेखों के द्वारा इस बात पर जो दिया। उन्होंने कहा "देश की समृद्धि और प्रगति गाँवों पर निर्भर है और यदि गाँव की समृद्धि एवं संस्कृति नष्ट होती है तो भारत भी नष्ट हो जाएगा। "गाँधीजी का स्वराज सहज रूप से ग्रामीण विकास से जुड़ा हुआ था। गाँधीजी ने कभी अपने गौरवशाली नाम के आगे 'वाद' जोड़ने की न तो इच्छा प्रगट की, न ही ऐसा करने को कहा। लेकिन गाँधीवाद का विकाश पूरी मानव जाति की शांति, खुशहाली, आजादी, सद्भावना और उत्तरजीविता के लिए एक वैश्विक आवश्यकता बन गया है।

हिन्दू समाज में अस्पृश्यात समाप्ति सैकड़ों वर्ष से अस्पृश्यता भारतीय समाज व्यवस्था का अभिन्न अंग रही है। यहाँ तक उसे धार्मिक व्यवस्था भी मान लिया गया। अपने ही सहधर्मियों को अछूत घोषित करके उन्हें सहज मनुष्यता से वंचित रखने वाली इस प्रथा को समूल नष्ट करने और उसकी अवाज्ञा करने वालों को दंडित करने का संकल्प अपने आप में एक क्रांति थी। देश के बुनियादी कानून के माध्यम से वंचितों और उत्पीड़ितों को सामाजिक समता और समान नागरिक अधिकारों को मान्यता देने वाली क्रांति यद्यपि भारतीय राष्ट्रीय कांग्रेस ने 1917 में ही प्रस्ताव पारित करके देशवासियों से अपील की थी कि वे परम्परा अथवा रिवाज से अस्पृश्यता पर थोपी हुई निर्माताओं का पालन बंद कर दे। 29 अप्रैल 1949 निश्चय ही वह भारतीय इतिहास

का गौरवमय दिन था, उस दिन संविधान सभा ने प्रस्ताव पारित करके यह घोषणा की कि अस्पृश्यता का अंत किया जाता है, उसका किसी भी रूप से आचरण निषिद्ध किया जाता है। वास्तव सरदार पटेल ने पेश किया था। बाद में यही घोषणा भारतीय संविधान में अनुच्छेदों 17 के रूप में सम्मिलित की गई। संविधान का अनुच्छेद 17 ने एक प्रकार से राष्ट्रीय आंदोलन के सामाजिक लक्ष्य को मान्यता दी और उसे राष्ट्र जीवन में चरितार्थ करने के लिए राज्य को अपनी दंड शक्ति के उपयोग का अधिकार भी दिया। अनेक विदेशी समाचार पत्रों ने अस्पृश्यता उन्मूलन की इस घटना का स्वागत किया। न्यूयार्क टाइम्स ने इसे प्राचीन काल से चले आ रहे अस्पृश्यता के दाग को खत्म करने का महान कार्य बनाया।

गाँधीजी से 5 मई 1947 को रायटर के विशेष संवाददाता इमान कैपवेल ने पूछा क्या संविधान के मसौदे में अस्पृश्यता उन्मूलन के प्रावधान सम्मिलित करना एक महान सुधार का घोटक है। गाँधीजी ने कहा, नहीं यह अनुच्छेद अपने में महान सुधम का घोटक नहीं है। ये तो सिर्फ इसका घोटक है कि हिन्दू सम्मान में एक महान क्रांति कारी सुधार हो रहा है। मैं कबूल करता हूँ कि अभी तक अस्पृश्यता की रात खाओ, पत्तों सहित समूल नष्ट नहीं हुई है। बिट्रेन से हमारा अभी तक के रिश्तों के दुष्प्रभाव की तरह ही आवश्यकता के दुष्प्रभाव भी एक पल में विलुप्त नहीं होगी। आखिर यह काफी पुराना प्रथा है इसे मिटने में कुछ वर्ष लगेंगे। देश के स्वतंत्र होने के बाद भारतीय समाज और अर्थ व्यवस्था में काफी परिवर्तन हुए हैं। बहुमुखी सामाजिक परिवर्तनों की इस प्रक्रिया से भारतीय समाज व्यवस्था की अंधेरी बंद कोठरियों में भी रोशनी की कुछ किरणें पहुँचते हैं। इसके साथ ही पैदाइश उँच नीच पर आधारित समाज में सबसे नीचे की सीढ़ी पर रह रहे अस्पृश्यों में अपने अधिकारों के प्रति चेतना बढ़ रही है।

गाँधीजी हिन्दू समाज के उत्कर्ष के लिए अस्पृश्यता की समाप्ति के बाद एक व्यापक योजना रची थी। दूसरी ओर डॉ० अम्बेडकर का मानना था कि संविधान में अस्पृश्यता को एक अपराध घोषित करने के बाद भी और तथाकथित अस्पृश्यों के लिए आरक्षण की व्यवस्था कर देने के बाद भी हिन्दू समाज में इन अस्पृश्यों को सम्मान मिलना मुश्किल है। इसी तर्क को आगे बढ़ाते हुए डा० अंबेडकर ने कहा कि अस्पृश्य, मुसलमानों की तरह एक अल्पसंख्यक समुदाय है। इसकी एक अलग सामाजिक पहचान होनी चाहिए। डॉ० अंबेडकर ने आरंभ में तो अपने संगठन समाज समता संघ द्वारा अछूतों को यज्ञोपवीत पहनाने के कार्य कम किए और सर्वेणों तथा अछूतों का सहभोजों का भी आयोजन किया। साथ ही हिन्दू मंदिरों में अछूतों को प्रवेश के लिए सत्याग्रह भी किए परन्तु बाद में वे अछूतों द्वारा अपनी अलग पहचान बनाने, नवबौद्ध धर्म में दीक्षित होने तथा स्वतंत्र राजनैतिक शक्ति बढ़ाने के कार्यक्रमों पर अधिक जोर देने लगे।

गाँधीजी स्वस्थ समाज और मजबूत भारत के निर्माण के लिए इस तरह के कार्यों का सामज में प्रचार-प्रसार होना चाहिए। तभी समाज में सामाजिक समरसता आ सकती है। नफरत फैलाने वाले पेशेवर राजनीतिज्ञों से हमें न केवल सावधान रहना है बल्कि ऐसे लोगों का सामाजिक बहिष्कार भी करना है तभी हम स्वस्थ, मजबूत और समरस भारत का निर्माण कर सकते हैं।

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# मानसिक प्रतिचित्रण तकनीक की प्रभावशीलता का अध्ययन गणित उपलब्धि के संदर्भ में

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## सारांश

प्रस्तुत अध्ययन का उद्देश्य माध्यमिक स्तर के विद्यार्थियों के गणित शिक्षण में मानसिक प्रतिचित्रण तकनीक की प्रभावशीलता पारंपरिक विधि के परिपेक्ष्य में ज्ञात करना है। प्रस्तुत अध्ययन में प्रतिदर्श के रूप में भोपाल जिले के कक्षा 6 के 70 विद्यार्थियों का चयन किया गया है। मानसिक प्रतिचित्रण एवं उपलब्धि परिक्षण शोधकर्ता द्वारा निर्मित किया गया है। अध्ययन में दो समान समूहों में पूर्व-पश्च प्रयोगिक अभिकल्प का प्रयोग किया गया है तथा प्राप्त प्रदत्तों के विश्लेषण हेतु माध्य, मानक विचलन तथा 't' टेस्ट का प्रयोग किया गया है। प्रस्तुत अध्ययन द्वारा यह निष्कर्ष प्राप्त होता है कि मानसिक प्रतिचित्रण तकनीक पारंपरिक विधि की तुलना में अधिक प्रभावशाली है।

बीसवीं शताब्दी के प्रख्यात ब्रिटिश गणितज्ञ और दार्शनिक बर्टेंड रसेल के अनुसार "गणित को एक ऐसे विषय के रूप में परिभाषित किया जा सकता है, जिसमें हम जानते ही नहीं की हम क्या कह रहे हैं, न ही हमें यह पता होता है कि जो हम कह रहे हैं वह सत्य भी है या नहीं।" गणित कुछ अमूर्त धारणाओं एवं नियमों का संकलन मात्र ही नहीं है, अपितु दैनिक जीवन का मूलाधार है। अधिकतर विद्यार्थी गणित विषयों को कठिनतम विषय के रूप में देखते हैं तथा भयभीत होते हैं। वर्तमान में ज्यादातर शिक्षक पारंपरिक शिक्षण प्रणालियों का प्रयोग ही करते हैं जिससे विषय यांत्रिक हो जाता है। हमारा मस्तिष्क दो प्रांतस्थाओं में विभाजित होता है। यदि हम अपनी स्मृति सुधारना चाहते हैं तो हमें अपने सम्पूर्ण मस्तिष्क का उपयोग करना होता है। अतः शिक्षकों को ऐसी प्रभावशाली शिक्षण विधियों का प्रयोग करना चाहिए जिससे कि गणित शिक्षण द्वारा विद्यार्थियों की गणितीय एवं तर्क क्षमता को बढ़ा सकें तथा अपने जीवन में गणित को सहजता से प्रयोग कर सकें। राष्ट्रीय पाठ्यचर्या 2005 के अनुसार, "गणित शिक्षण का उच्च लक्ष्य है बच्चों के साधनों को विकसित करना ताकि वे गणितीय ढंग से सोच सकें और अमूर्त को समझ सकें।

## मानसिक प्रतिचित्रण

मानसिक प्रतिचित्रण मूल रूप से एक ऐसा चित्र है जो केन्द्रीय विषय के आसपास की जानकारी को जोड़ता है यह एक पेड़ की तरह लगता है, जिसमें सूचनाओं को कई शाखाओं में विभक्त किया जाता है। किसी भी मानसिक प्रतिचित्रण में मुख्य विचार को केन्द्र में रखा जाता है तथा उसके अंतर्गत अन्य विचार बिंदु उसकी शाखाएँ होती हैं।

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### मानसिक प्रतिचित्र निर्माण की प्रक्रिया

- किसी भी पेज के बीच से प्रारंभ करके मुख्य टॉपिक लिखते हैं।
- उस विषय बिंदु से संबंधित उप-बिंदुओं के प्वाइन्ट्स लिखते हैं।
- इसी प्रक्रिया को आगे बढ़ाते हुए आगे के उपबिंदु लिखे जाते हैं।
- चित्रों, प्रतिकों तथा रंगों का ज्यादा से ज्यादा प्रयोग किया जाता है।
- शीर्षक छोटे रखे जाते हैं जिससे समझने में सुविधा हो।
- विभिन्न सूचनाओं के मध्य पर्याप्त स्थान रखा जाता है।
- मुख्य शाखाओं के प्रस्तुतीकरण में गहरे रंग की या मोटी रेखाओं का प्रयोग किया जाता है जबकि उप शाखाओं के लिए पतली रेखाओं का।

### मानसिक प्रतिचित्रण के लाभ

- इसके द्वारा हमारा मस्तिष्क कुछ ही सेकंड्स में ही सेकड़ों इमेज प्रोसेस कर सकता है।
- ये ब्रेन फ्रेंडली होते हैं।
- मैप के द्वारा प्राप्त जानकारी हमारे मस्तिष्क में अधिक समय तक स्थिर रहती है।
- मानसिक प्रतिचित्रण तकनीक रोचक है।
- पुरानी चीजों को रिव्यू करना आसान होता है।

### गणित एवं मानसिक प्रतिचित्रण

मानसिक प्रतिचित्रण किसी भी विषय की शिक्षण प्रक्रिया में उपयोगी होती है विशेष रूप से गणित शिक्षण में इस तकनीकी के प्रयोग से आश्चर्यजनक परिणाम प्राप्त किये जा सकते हैं।

### गणित शिक्षण में मानसिक प्रतिचित्र निम्न प्रकार सहायता कर सकते हैं-

- अत्यधिक आँकड़ों एवं सूचनाओं को सुविधाजनक रूप से प्रस्तुत करने में।
- नवीन विधियों से सवालों को हल करने में प्रोत्साहित करने में।
- किसी व्यक्ति अवधारणाओं को बढ़ाने में सक्षम होता है।
- एकाग्रता बढ़ाने में सहायक।
- मानसिक क्षमता को बढ़ाने में सहायक होता है।
- विचारों को प्रत्यक्ष रूप से संगठित करने में सहायता करता है।

### उद्देश्य

1. कक्षा 6 के विद्यार्थियों की गणित उपलब्धि पर मानसिक प्रतिचित्रण तकनीकी की प्रभावशीलता का अध्ययन करना।
2. कक्षा 6 के विद्यार्थियों की गणित उपलब्धि पर मानसिक प्रतिचित्रण तकनीक का लिंग के संदर्भ में अध्ययन करना।

### परिकल्पनाएँ

- नियंत्रित समूह एवं प्रयोगात्मक समूहों के विद्यार्थियों के पूर्व एवं पश्च परिक्षण के अंकों में कोई सार्थक अंतर नहीं है।
- नियंत्रित समूह एवं प्रयोगात्मक समूहों के पश्च परिक्षण के अंकों में लिंग के साथ कोई सार्थक अंतर नहीं है।

### शोध प्रविधि

अध्ययनकर्ता द्वारा भोपाल जिले के माध्यमिक शिक्षा मंडल के कक्षा 6 के 70 विद्यार्थियों का चयन किया गया है।

### प्रयोगात्मक आव्यूह

प्रस्तुत अध्ययन में पूर्व-पश्च परिक्षण विधि का प्रयोग किया गया है जिसमें दो समूहों को लिया गया है, एक समूह नियंत्रित समूह है तथा दूसरा समूह प्रयोगात्मक समूह है।

### उपकरण

- मानसिक प्रतिचित्र- ज्यामितीय अवधारणाओं जैसे रेखा, त्रिभुज, चतुर्भुज, पंचभुज आदि पर आधारित मानसिक प्रतिचित्र
- **उपलब्धि परिक्षण** - ज्यामिती के कुछ शीर्षकों पर आधारित उपलब्धि परिक्षण का निर्माण किया गया है जिसके लिए सर्वप्रथम एक ब्ल्यू प्रिंट तैयार किया गया। जिसके अंतर्गत ज्ञान, समझ एवं कौशल का ध्यान रखते हुए प्रश्नों का निर्माण किया गया जिसमें बहुविकल्पीय प्रश्नों का प्रयोग किया गया। कुल अंक 50 रखे गये तथा समय सीमा 40 मिनट निर्धारित की गई।

### प्रयोग संचालन

चयनित 70 विद्यार्थियों को दो समूहों में विभाजित किया गया जिसमें प्रत्येक समूह में 35-35 विद्यार्थियों को शामिल किया गया।

किसी भी विधि द्वारा शिक्षण कराने से पूर्व उपलब्धि परिक्षण लिया गया तथा प्राप्त अंको का एकत्रण किया। पूर्व परीक्षण के पश्चात् प्रयोगात्मक समूह को मानसिक प्रतिचित्रण तकनीकी के प्रयोग द्वारा उपचार दिया गया जबकि नियंत्रित समूह को पारंपरिक विधि से अध्यापन कराया जिसमें दोनों ही समूहों को 12 दिनों तक शिक्षण कराया गया। तदोपरांत दोनों समूहों में पश्च परिक्षण को संचालन किया गया एवं प्राप्त अंको का एकत्रण किया।

### प्रदत्तों का विश्लेषण एवं व्याख्या

#### परिकल्पना- 1

नियंत्रित समूह एवं प्रयोगात्मक समूहों के विद्यार्थियों के पूर्व एवं पश्च परीक्षण के अंकों में कोई सार्थक अंतर नहीं है।

समूह	छात्रा संख्या	माध्य	मानक विचलन	षज् मान	सारणिक मान
नियंत्रित	35	27.73	11.4	3.16	2.59
प्रयोगात्मक	35	44.25	14.48		

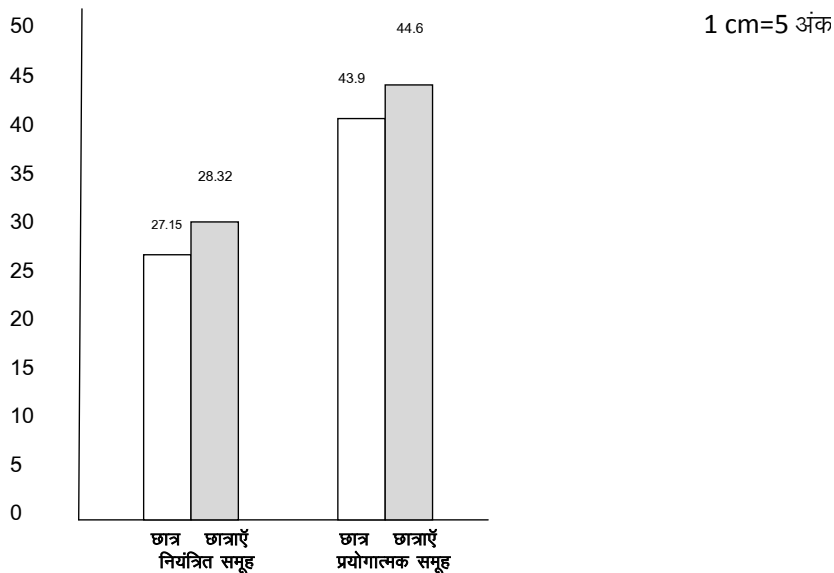


200 डॉ. श्रीमती वर्षा त्रिपाठी और श्रीमती प्रियंका लालवानी

चूंकि 0.01 सार्थकता स्तर पर प्राप्त 't' मान उच्च है इसलिए परिकल्पना अस्वीकार की जाती है। अतः यह स्पष्ट होता है कि विद्यार्थियों की गणित उपलब्धि पर मानसिक प्रतिचित्रण तकनीकी का प्रभाव है।

2. नियंत्रित समूह एवं प्रयोगात्मक समूहों के पश्च परीक्षण के अंको में लिंग के साथ कोई सार्थक अंतर नहीं है।

समूह	विद्यार्थी	संख्या	माध्य	प्रामाणिक विचलन	't' मान	सारणिक मान
नियंत्रित समूह	छात्र	20	27.15	11.58	3.29	2.76
प्रयोगात्मक समूह	छात्र	20	43.9	14.36		
नियंत्रित समूह	छात्राएं	15	28.32	11.3	3.04	2.84
प्रयोगात्मक समूह	छात्राएं	15	44.6	14.6		



## निष्कर्ष

उपर्युक्त अध्ययन द्वारा यह ज्ञात होता है कि मानसिक प्रतिचित्रण तकनीकी पारंपरिक विधि की तुलना में अत्यधिक प्रभावशाली है। पारंपरिक विधि गणित उपलब्धि तो बढ़ाती है परन्तु मानसिक प्रतिचित्रण विधि ज्यादा प्रभावशाली है जबकि लिंग विशेष पर इस तकनीकी का कोई विशेष प्रभाव नहीं पड़ता है।

## शैक्षिक निहितार्थ

- मानसिक प्रतिचित्रण विधि केवल गणित विषय के शिक्षण में ही नहीं अपितु अन्य विषयों जैसे हिन्दी अंग्रेजी, सामाजिक अध्ययन आदि के शिक्षण में भी सहायक होती है।
- विद्यार्थियों में गणित विषय के प्रति रुचि उत्पन्न की जा सकती है।

- इसका प्रयोग शिक्षण प्रशिक्षण कार्यक्रम में किया जा सकता है।
- विद्यार्थियों को स्वयं मानसिक प्रतिचित्रण बनाने को प्रेरित करके उनकी सीखने की क्षमता को बढ़ाया जा सकता है।
- इस तकनीक के उपयोग से गणित विषय में कठिन सूत्रों, परिभाषाओं को आसानी से याद किया जा सकता है।
- पुनरावृत्ति के समय इसका प्रयोग लाभकारी हो सकता है।

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# Study of Ultrasonic Velocity of Aliphatic Compounds

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The study of Ultrasonic velocity in Binary Liquid Mixtures of halogen derivatives of aliphatic compounds have been used to investigate the interactions between the components of binary liquid mixtures. In recent years, the measurement of ultrasonic velocity has been extensively applied in understanding the nature of molecular systems, physicochemical behaviour and molecular interactions in liquid mixtures. Rout and Chakravorty studied the molecular interactions in binary mixtures of acetyl acetone with isoamyl alcohol, benzene and carbon tetrachloride at 30, 35, 40 and 450 C and showed that due to dipole-induced dipole interactions between unlike molecules, a relatively stronger interaction is present in the mixtures of acetyl acetone and carbon tetrachloride system than in the other two systems. Ultrasonic velocity studies of Nikam et. Al. in binary liquid mixtures of nitrobenzene with several alcohols at 25 and 300 C showed that strong dipole-dipole interactions are present in the liquid mixtures. Ramababu et al. discussed extensive application of isentropic compressibilities of liquid mixtures in characterizing molecular association, dissociation and complex formation. The chapter third deals with the experimental study of ultrasonic velocity, density and viscosity in a few binary organic liquid mixtures at different temperatures. Organic solvents can be classified on the basis of their structure and dielectric constants. On the basis of structure they are classified as aliphatic and aromatics. Aliphatic has an open chain structure and aromatics have a closed chain structure. Polar solvents are those having high dielectric constants, which produce effects on reaction rates that are different from those produced by non-polar solvents (having very low dielectric constants). There are important differences between protic solvents containing hydrogen that is attached to oxygen or nitrogen and hence acidic enough to form hydrogen bonds and aprotic solvents which do not contain acidic hydrogen and in which all hydrogen are bonded to carbon. Methyl ethyl ketone, nitrobenzene, chlorobenzene and bromobenzene are polar aprotic solvents while benzene and toluene are non-polar aprotic solvents.

Ultrasonic velocity, density and viscosity were measured in binary mixtures of nitrobenzene, chlorobenzene, bromobenzene, toluene and benzene with methyl ethyl ketone as a common component, at four different temperatures. Various thermoacoustical parameters and excess thermodynamical functions were evaluated. An analysis of these results suggests the presence of strong intermolecular interactions resulting from dipole-dipole interactions and hyperconjugation in all the binary mixtures.

Theoretical values of ultrasonic velocity in the binary mixtures of cyclohexanone with 2-propanol and 2-methyl-2-propanol have been evaluated at 303 K using Nomoto's relation, collision factor theory, free length theory, ideal mixture relation, Junjie's method. Theoretical values are compared with the experimental values and the validity of the theories are checked by applying the chi-square test for goodness of fit and by calculating the average percentage error (APE).

Ultrasonic velocity, density and viscosity of binary liquid mixtures of acetone and carbon tetrachloride, acetonitrile and aniline, acetone and iso-propyl alcohol, methyl ethyl ketone and Acetonitrile have been measured at room temperature 303K. Excess value of parameters such as adiabatic compressibility  $\beta$ , internal pressure ( $\pi_i$ ) acoustic impedance (Z). Excess volume ( $V^E$ ). Excess viscosity ( $\Delta\eta$ ) and Excess adiabatic compressibility ( $\beta^E$ ) have been calculated. Ultrasonic velocities. Evaluated

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using Nomoto Van Deal equation and Free length theory have been compared with experimental values. It has been established that ultrasonic velocity increases with decrease in free length. Also Rao's constant shows a non liner variation confirming the associative nature of liquids.

Ultrasonic velocities and densities of the binary liquid mixtures of dimethyl sulphoxide (DMSO) with phenol, o-cresol, m-cresol, p-cresol and p-chlorophenol at 318.15K, over the entire composition range were measured, The theoretical values of ultrasonic velocity were evaluated using the Nomoto's Relation (NR), Ideal Mixture Relation (IMR), Free Length Theory (FT) and Collision Factor Theory (FLT). The validity of these relations and theories was tested by comparing the computed sound velocities with experimental values. Further, the molecular interaction parameter ( $a$ ) was computed by using the experimental and the theoretical ultrasonic velocity values. The variation of this parameter with composition of the mixtures has been discussed in terms of molecular interaction in these mixtures.

Properties of liquid-liquid mixtures are thermodynamically very important as part of studies of the thermodynamic, acoustic and transport aspects. The compositional dependence of thermodynamic properties has proved to be very useful tool in understanding the nature and extent of pattern of molecular aggregation resulting from intermolecular interaction between components. This type of study is powerful means of characterizing the various aspects of physic-chemical behavior of liquid mixtures and studying the interaction between molecules.

The viscosity, density and ultrasonic velocities measurements find wide applications in characterizing the physic-chemical behavior of binary liquid mixture and in the study of molecular interactions. Ultrasonic velocity of a liquid is related to the binding forces between the almost the molecules. Ultrasonic velocity has been adequately employed in understanding the nature of molecular interactions in pure liquids and binary mixtures. The method of studying the molecular interaction from the knowledge of variation of thermodynamic parameters and their excess values with composition gives an insight into the molecular process.

Ultrasonic technique has become a powerful toll to study the molecular behavior of binary liquid mixtures. This is because of its ability of characterizing physic-chemical behavior of liquid medium as such.

The interaction is characteristic of class of liquids showing pronounced structural properties and these structural arrangements are influenced not only by shape of molecules but also by their mutual interactions. The research project is analytical. Various ultrasonic and acoustical studies was made for molecular interaction of binary liquid mixtures mention in the chapterization.

Ultrasonic velocity measurements have been employed extensively to detect and assess weak and strong molecular interactions in binary and ternary mixtures, because mixed solvents find practical applications in many chemical and industrial processes. To meet the needs of applications, ultrasound velocity measurements are generally carried out at different temperatures. The parameters such as ultrasound velocity ( $U$ ), density ( $\rho$ ) and ( $\eta$ ) and computed parameter such as isentropic compressibility ( $\beta_s$ ), molar volume ( $V_m$ ) and intermolecular free length ( $V_a$ ) provide better inside into intermolecular interaction.

In this research project Thermodynamical Properties of some Binary liquid mixtures of Halogen Derivatives of Aliphatic Compounds have been presented as follows :

Chapter 1 deals with the study of Introduction and Review.

In Chapter 2 we present the Studies of free volume of Binary liquid mixtures of halogen derivatives of aliphatic compounds.

In Chapter 3 we deals the Study of ultrasonic velocities of Binary liquid mixtures of halogen derivatives of aliphatic compounds. Where as 4<sup>th</sup> chapter deals with the Study of intermolecular interaction of Binary liquid mixtures of halogen derivatives of aliphatic compounds.

In the last 5<sup>th</sup> chapter Summary & Conclusion we concluded as whole research work undertaken has been completed.

At the end we present the vast Bibliography.

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# वीरपुर अनुमंडल में अधिवास प्रकार एवं प्रारूप पर पर्यावरण के प्रभाव का भौगोलिक अध्ययन

ओमप्रकाश मेहता\*

## शोध कार्य का उद्देश्य एवं महत्व

मानव अधिवास मानव भूगोल का एक महत्वपूर्ण पक्ष है। सभ्यता विकास के प्रारम्भिक काल से मानव अपने क्षेत्र के प्राकृतिक संसाधनों से अपने अधिवास का निर्माण करता आया है। ठंडे वातावरण में एस्किमों का घर इग्लू, गर्म वातावरण में बुशमैन की झोपडी, पर्वतीय भागों में पत्थर काट कर बनाया गया घर वहाँ के भौतिक पर्यावरण एवं उपलब्ध भवन निर्माण सामग्री से तैयार होते रहे हैं। विकास की प्रक्रिया में मानव जब स्थायी रूप में अपना घर बना कर रहना प्रारम्भ किया तो धीरे-धीरे टोला, गाँव, नगर एवं महानगरों का विकास हुआ। इसलिए अधिवास का स्वभाव एवं प्रारूप मूलतः वहाँ के पर्यावरणिय दशाओं से प्रभावित होते हैं। पर्यावरणीय दशाओं में भौतिक पर्यावरण एवं सांस्कृतिक पर्यावरण दोनों कारक मानव अधिवास को प्रभावित करते हैं। अध्ययन क्षेत्र वीरपुर अनुमंडल सुपौल जिला का एक अनुमंडल है जो कोसी मैदान के उत्तरी भाग में स्थित है। कोसी मैदान, कोशी एवं उसकी सहायक नदियाँ के बाढ़से प्रभावित होता रहा है। इसलिए यह आर्थिक दृष्टि से एक पिछड़ा क्षेत्र है। यहाँ बाँस जूट का डंठल, कसाल घास, पटेर, खरई आदि मुख्य गृह निर्माण सामग्री है। इसलिए यहाँ अधिकांश गृह इन्हीं सामग्रियों से बने हैं। गृह का आकार षंकुनुमा होता है। क्योंकि यहाँ वर्षा का अनुपात अधिक है। यदि षंकुनुमा आकार नहीं होगा तो वर्षा की अधिकता से पानी छप्पर पर जमा होने से यह सड़ जाएगा।

अध्ययन क्षेत्र में एक नई प्रवृत्ति यह आई है कि जिन लोगों की आय में वृद्धि हुई है, वे कसाल घास की जगह टीन का छप्पर बनाना प्रारम्भ किए हैं। इसके अतिरिक्त जिस परिवार में नौकरी या वाणिज्य से आय में वृद्धि हुई है, उनका पक्का गृह बना है। स्पष्टतः वीरपुर अनुमंडल में अधिवास के स्वभाव पर पर्यावरण का प्रभाव पडा है। प्रस्तुत शोध कार्य में अध्ययन क्षेत्र में अधिवास के स्वभाव पर पर्यावरण के प्रभाव का भौगोलिक अध्ययन किया जाएगा।

## अध्ययन क्षेत्र

अध्ययन क्षेत्र वीरपुर अनुमंडल सुपौल जिला का एक अनुमंडल है, जो इस जिला के उत्तरी भाग में स्थित है। इसका विस्तार 25037' से 26025' उत्तरी आक्षांस एवं 860 22' से 870 10' पूर्वी देशान्तर के बीच है, इसका विस्तार 685 वर्ग किलोमीटर क्षेत्र में है। 2011 की जनगणना के अनुसार यहाँ की कुल आबादी 426572 है। इसके उत्तर में नेपाल, दक्षिण में सुपौल जिला का त्रिवेणीगंज अनुमंडल, पूरब में अररिया जिला एवं पश्चिम में सुपौल जिला का निर्मली अनुमंडल स्थित है। वीरपुर की पहचान यहाँ पर भीमनगर बराज के निर्माण के लिए बने कोसी कॉलनी एवं इसके समीप भीमनगर में भारत-नेपाल सीमा पर बना कोसी बराज है।

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## विधितंत्र

अधिवास का स्वभाव मूलतः इसके प्रकार एवं प्रारूप से सम्बन्धित है। इसलिए अधिवास का अध्ययन मूलतः स्थलाकृतिक मानचित्र के सहारे किया जाता है। गाँव के कडेस्ट्रल मानचित्र एवं स्थलाकृतिक मानचित्र के सहारे इसके मारफोलॉजी का निर्धारण किया जाता है। प्रस्तुत षोध कार्यके लिए प्राथमिक आँकडा वीरपुर अनुमंडल में साधारण प्रक्रिया से चयनित गावों से प्राप्त किया जाएगा। द्वितीयक आँकडा प्रकाशित स्त्रोतों, जैसे सैन्सस हैण्डबुक से हाड्स एवं हाडसौल्ड की संख्या को प्राप्त किया जाएगा। अधिवास के स्वभाव को दर्शाने के लिए सांख्यिकी के नियमों विशेषकर कोरिलेसन एवं रियरेसन के सहारे अधिवास का डिसपर्सन ज्ञात किया जाएगा। आँकडे के सहारे मानचित्र, रेखाचित्र, एवं ग्रफ तैयार किया जाएगा।

## परिकल्पना

प्रस्तुत षोध कार्य की परिकल्पना के सहारे गतिशील किया जाएगा। क्योंकि परिकल्पना रूपी दर्पण में सम्बन्धित विशय बस्तु का प्रतिबिम्ब अवलोकित होता है। प्रस्तुत षोध कार्य के लिए निम्न परिकल्पनाओं का परीक्षण किया जाएगा।

1. अधिवास प्रकार भौतिक, आर्थिक एवं सांस्कृतिक पर्यावरण से प्रभावित हो होता है।
2. अधिवास प्रारूप के विकास पर उच्चावचन, प्रवाहतंत्र एवं परिवहन तंत्र का प्रभाव पडता है।
3. अधिवास के परिविकिर्णन के मापन मे नियरेस्ट नेवर विधि एवं क्वाडरेट से मापन किया जाएगा।
4. अधिवास के स्वाभाव के निर्धारण में काले प्रियरसन्स का सह सम्बन्ध विधि का अनुपालन किया जाएगा।
5. आर्थिक विकास का प्रभाव अधिवास पर पडा है।

## अध्याय संरचना

प्रस्तुत षोध कार्य निम्नलिखित अध्यायों में वर्णन किया जाएगा :-

1. सामान्य परिचय :  
प्रथम अध्याय सामान्य परिचय में षोध कार्य का महत्व, पूर्व में किए गए षोध कार्य एवं सम्बन्धित पुस्तकों एवं षोध पत्रों का सर्वेक्षण तथा अध्याय संरचना का वर्णन किया जाएगा।
2. अध्ययन क्षेत्रभौतिक भूदृश्य :  
द्वितीय अध्याय में अध्ययन क्षेत्र वीरपुर अनुमंडल के भौतिक पक्षों का वर्णन किया जाएगा। इस अध्याय में मेंधरातल स्वरूप, मौसम एवं जलवायु प्रवाह तंत्र, वनस्पति एवं मिट्टी का वर्णन किया जाएगा।
3. अध्ययन क्षेत्र—सांस्कृतिक भूदृश्य :  
तृतीय अध्याय में अध्ययन क्षेत्र के सांस्कृतिक भूदृश्य का वर्णन किया जाएगा।
4. अधिवास प्रकार :  
चतुर्थ अध्याय में अध्ययन क्षेत्र में अधिवास प्रकार का वर्णन किया जाएगा एवं अधिवास प्रकार के निर्धारण में सांख्यिकीय विधियों का अनुपालन किया जाएगा।
5. अधिवास प्रारूप :

पाँचवें अध्याय में अध्ययन क्षेत्र वीरपुर अनुमंडल में अधिवास प्रारूप का वर्णन किया जाएगा । स्थलाकृतिक मानचित्र से प्रारूप का निर्धारण किया जाएगा ।

6 अधिवास पर पर्यावरण का प्रभाव :

छठा अध्याय में वीरपुर अनुमंडल के चयनित गाँवों में अधिवास के स्वभाव पर पर्यावरण के प्रभाव का अध्ययन किया जाएगा ।

### सारांश एवं निष्कर्ष

वीरपुर अनुमंडल में अधिवास प्रकार एवं प्रारूप पर पर्यावरण के प्रभाव का भौगोलिक अध्ययन सातवें एवं अंतिम अध्याय में शोध कार्य का सारांश एवं निष्कर्ष प्रस्तुत किया जाना है ।

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# जल संसाधन एवं आर्थिक क्रांति : अवधारणा, आवश्यकता, विकास एवं संकट

मुख्तार पासवान (कवि)\*

## भूमिका

कोशी प्रमण्डल में प्राकृतिक रूप से बाढ़ एवं सुखाड़ प्रवण क्षेत्र है, इस क्षेत्र की जलवायु समशीतोष्ण है, यहाँ की उर्वरा भूमि अधिक गौरव शक्तिशाली है। जल की पर्याप्त धाराएँ अनेकों दिशा में प्रवाहित होती हैं। जल ही जीवन जल ही सृष्टि अमृत धारा है। पंच तत्वों में सर्वश्रेष्ठ जल ही जीवन है। जल अमृत रूपी सागर धड़ा रूपी संसार के कण-कण में प्रवाहित जलधारा सुखकारी, उपकारी मनोरम दृष्टि सुहावना संसारिक सुख-सागर है। मानव या जीवधारी ने पल-पल रोम-रोम संचित होने से जीवन धारा संसार का सृष्टि संचालन हो रहा है।

## जल की परिभाषा एवं अवधारणाएँ

प्राचीन धारणा थी कि संसार पाँच मूल तत्वों में क्षिति (पृथ्वी) आप (जल) तेज (प्रकाश/उष्मा) मारुत वायु और व्योम (आकाश आंतरिक्ष) से मिलकर बना है। ऋग्वेद के अनुसार जीवन जल से ही निकला है शुद्ध जल को शीतल (ठंडा होना) सूचि (स्वच्छ शिवम) उपयोगी खनिज एवं तत्वों से युक्त स्थल पारदर्शी तथा विमल लई भाङ्गुणम (अम्ला का संतुलन सामान्य गुण सीमा से अधिक तक हो) के गुणों के कारण दिव्यजल कहा जाता था। इसके अतिरिक्त जल के औषधीय गुणों के भी अनेक उल्लेख हैं जल की रसायनिक समीकरण  $H_2O_2-2H_2O$  है।

पृथ्वी की दो तिहाई सतह जल से आवृत होने के कारण और मानव शरीर में 75 प्रतिशत जल होने के कारण यह स्पष्ट है कि जल धरती पर जीवन के लिए उत्तरदायी प्रमुख तत्वों में से एक है। मानवता के आरम्भ से ही समस्याओं की उत्पत्ति जल के कारण हुई है। जल ने ही लोगों के निवास उत्पत्ति जल के कारण हुई है। जल ने ही लोगों के निवास स्थान को प्रभावित किया क्योंकि हमारे पूर्वजों ने कृषि कार्य के कारण जल से आस-पास ही छोटे-छोटे नगर बसाये।

## जल है तो कल है सत्य ही है

जिसका अर्थ है कि हमारा भविष्य तभी सुरक्षित होगा, जब तक जल सुरक्षित होगा। किन्तु मानव इस प्रकृति प्रदत्त बहुमूल्य संस्थान का निर्दयता से दुरुपयोग कर रहा है। प्रत्येक व्यक्ति को यह आवाज उठाने का समय आ गया है कि जल चक्र और जीवन चक्र एक ही है। अतः आईए आज से हमलोग जल की एक एक बूंद बचाएँ और इस अमूल्य संसाधन का संरक्षण करें।

\*शोधवृत्ति शिक्षक, स्नातकोत्तर अर्थशास्त्र विभाग भू0 ना0 मंडल विश्वविद्यालय, मधेपुरा (बिहार)

सुश्रुत संहिता का 45वें अध्याय— पेयजल पर है, उन्होंने जल को दो भागों में विभाजित किया है। गंगा (शुद्ध) एवं समुद्र (असुद्ध) गंगा को पुनः चार प्रकारों से विभक्त किया गया है। धारा, कश, तौशारा (ईकट्टा किया गया वर्षा जल) एवं हेमा (हेमा संवत) उपरोक्त उदाहरणों के आधार पर हम कह सकते हैं कि प्राचीन साहित्य में जल की महत्ता को ध्यान में रखा गया था। उसे देवता का दर्जा मिला है। साथ ही उसके स्त्रोंतों संरक्षण के तरीकों एवं उसके शुद्धिकरण की चर्चा है। 1. स्रोत के अनुसार—वर्षा जल, हिम, समुद्र जल, भू-जल इत्यादि है।

2. स्वभाव के अनुसार गर्मजल, ठंडा जल, नारियल जल, इत्यादि
3. वनावट के अनुसार गैस का मिश्रण ऑक्सिजन, नाईट्रोजन हाईड्रोजन इथेन मिथेन प्रोपेन कार्बन इत्यादि।
4. पेय के आधार पर प्रदूषित जल, अमृत जल, गुलाब जल
5. आस्था के आधार पर—पवित्र जल, गंगाजल, छिप्रा, गोदावरी कावेरी, सरयुग कोसी इत्यादि।

### भारत के प्रारंभिक जल संरचनाओं की सूची

पारा हिमालय, पश्चिमी हिमालय, ब्रह्मपुत्र धाटी, गंगा सिंधु मैदान, आर, मध्यवर्ती उच्च भूमि, पूर्वी कच्ची जमीन, ढक्कन का पठार, पश्चिमी घाट, पूर्वीघाट, पूर्वीतटीय मैदान विभिन्न ऐतिहासिक कालक्रम में प्राप्त जल संरचनाएँ—300 ई0 पूर्व में वर्णित है।

### आर्थिक क्रांति में जल संसाधन की भूमिका आवश्यकता, विकास

विश्व आर्थिक मंच 2016 के प्रभावकारिता के स्तर पर वैश्विक खतरे के रूप में विश्व आर्थिक स्थिति जल संकट के विविध आयाम है। जिनमें भौतिक, आर्थिक, पर्यावरण प्रमुख है। आबादी का बढ़ता दबाव बड़े पैमाने पर शहरीकरण बढ़ती आर्थिक गति विविध उपयोग की बदलती प्रवृत्तियों रहन—सहन के स्तर में सुधार, जलवायु विविधता, सिंचित कृषि का विस्तार एवं जल की अधिकांश माँग करने वाली फसलों की पैदावार आदि से जल की माँग का दायरा बढ़ा है। जल सुरक्षा आर्थिक वृद्धि एवं मानव विकास की उपलब्धियों को प्रभावित करती है। बल्कि यह विभिन्न क्षेत्रों में पानी के उपयोग के स्तर को भी प्रभावित करती है।

सुरक्षित पेयजल तक पहुँच मानव जीवन एवं स्वास्थ्य के लिए वेहद जरूरी है यू0 एन0 डी0 पी0 2006 वेहतर जलापूर्ति एवं स्वच्छता सुविधाएँ को सन 2030 तक वैश्विक स्तर तक पहुँचाना विकास के प्रमुख लक्ष्यों में से एक है। गोल 2006 जो सभी के लिए जल एवं स्वच्छता की उपलब्धता एवं प्रबन्धन की कामना पर आधारित है संयुक्त राष्ट्र किसी खास बिन्दु एवं अन्य कारणों से प्रदूषण जल संसाधन को पेयजल उपलब्ध से बांचित करता है। इस तरह भावी पीढ़ी के लिए पेयजल के सुरक्षित स्रोत को काम करने के प्रयास आज दाव पर है। प्रदूषित पेयजल का उपयोग करने वाले आबादी विविध प्रकार के जल जनित रोगों का शिकार बनती है। इस कारण जल जनित बीमारियों से मृत्यु दर बीमारियाँ उच्च स्तर पर है।

### जल संसाधन अब हमारी अर्थव्यवस्था के लिए भी महत्वपूर्ण

यह कृषि उद्योग, परिवहन के लिए ही नहीं बल्कि वानिकी, मनोरंजन एवं पर्यावरण के लिए भी महत्वपूर्ण घटक है। वर्तमान समय में जल के प्रति संवेदनहीन हो रहा है। नदियों, समुद्रों, और सागरों का शोषण किया

जा रहा है। प्रदूषित किया जा रहा है। जिससे विश्व के लगभग प्रत्येक भाग में जल दुर्लभ होता जा रहा है। गाँव में नर-नारियों का बहुमूल्य समय परिवार के लिए जल ढुंढने में बर्बाद हो रहा है। शहरों में भी जल के लिए अकसर झगड़े हो रहे हैं। सूखे के समय जल की भीषण किल्लत से कृषि एवं किसानों के कल्याण पर प्रभाव पड़ता है। जिससे कृषि उत्पादन बर्बाद होता है और बेवस किसान अत्महत्या कर लेते हैं। वाढ़ के समय जल की अधिकता के कारण भी वर्षा से जान-माल की बहुत क्षति होती आ रही है। यह दोहरी मार हमारी अर्थव्यवस्था की नियति बन गई है।

### जल संसाधन की महत्ता एवं विकास

जल की महत्ता को समझते हुए, उसे शुद्ध रखने का हर संभव प्रयत्न करना जरूरी है। विभिन्न स्रोतों से उपलब्ध जल को संरक्षित करते हुए, उपयोजन करने का व्रत लेना चाहिए। सभी नदियों, झीलों, तालाबों में उपलब्धता जल की गुणवत्ता एवं उसकी उपयोगिता को बनाएँ रखने में सक्षम होंगे। हमारे आदि ग्रंथ अथर्ववेद में इंसान द्वारा जल संसाधन कि अर्चना प्रार्थना में भावनाओं का ज्वार उफनता परिलक्षित होता है।

### जल संसाधन एक साहित्य दर्शन

भारतीय साहित्य हमारे लिए जल की शुद्धता हेतु चेतना का जीवान्त दस्तावेज है। महाकवि कालिदास को मेधदूत प्राकृतिक जल-प्रेम की एक अमर कृति है। महाकान्त छन्द में लिखे गए काव्य में नदियों एवं तलाइयों के शुद्ध जल का वर्णन है। जयदेव के गीत गोविन्द में संत वर्णन में कमलदल वाले सरोवरी एवं कामसिकता नदियों की कल्पना की गई हैं। जल-प्रेम का दलकता प्याला ही हमारी संस्कृति का महान अमृतपात्र है।

प्राकृतिक जल का उपयोग समान रूप से करने के न्यायिक एवं मानवीय अधिकार को जैन-धर्म में स्वीकार है। गुरु नानक व्यवहार में आचरण की पवित्रता के मुख्य प्रवक्ता रहे हैं। ईसा एव ईस्लाम धर्म की जल को अशुद्ध करने की अनुज्ञा अपने अनुयायियों को प्रदान नहीं किया है। भगवान बौद्ध ने हमेशा ऐसी जीवन जिया जिसकी प्रकृति से सन्निध्य रहा है। प्राकृतिक उनकी मित्र है और उनको प्रकृति के साथ मैत्री बनानी चाहिए। अर्थात् नैसर्गिक जल से भावत्मक सहसम्बन्ध स्थापित करने के उपदेश प्रदान लिए हैं।

### स्वातंत्रोत्तर काल से पूर्व ऐतिहासिक भूमिका मानव सभ्यता का विकास एवं संकट

यह सारी सृष्टि क्या जल संसाधन की ही तो रचना है? वे वनस्पतियों फूल फल ये भौति के जीव-जन्तु पशु-पक्षियों वन प्राणियों मानव समुदाय आरिवर ये किसकी उपज है। इसी जल संसाधन की कौरव ने ही तो इन सबको उपजाया है। जल वह अदभुत अमृत पान है-यदि यह बात नहीं होती तो पृथ्वी के आलावा सूर्य का चक्कर लगाने वाले ग्रहों में जीवन की कोई निशानी तो होती। सारे के सारे ग्रह उन लिफाफा की तरह हैं, जिनके ऊपर के खोल तो हैं, पर भीतर कुछ भी नहीं है। इन ग्रहों की भी ललक वहीं रहती है कि कही पानी मिल जाय, तो जीवन की सृष्टि तो हो पर क्या करे? पानी उनके नसीब में ही है तभी तो मैंने कहा कि यह जल की कोख ही है। जो सब कुछ उपजाती है। जहाँ कही भी ये सौख नहीं है, वहाँ कुछ भी नहीं है।

## प्राकृतिक के प्रकोप

सिंधु धाटी की सभ्यता का भू-भाग तो बहुत विस्तृत था। इनका एक भाग आम्बाला, भटिण्डा, बीकानेर और बहावलपुर तक फैला हुआ था। यू देखा जाय तो यह क्षेत्र सरस्वती नदी से सिंचित था। आज जो मरुस्थल दूर-दूर तक फैला हुआ है। उसका भाग्य-सितारा भी कभी चमकता था। और कला साहित्य एवं संस्कृतिक की उन्नति हो रही थी। समय ने करवट ली नदी की धारा क्षुद्र से छुदतर होते-होते विल्कूल ही विलुप्त हो गई। कालीबंगा जैसा समुन्नत क्षेत्र पूरी तरह विनष्ट हो गया। पर्यावरण कई बार चेतावनी देता है, और कई बार तो आश्चर्यजनक रूप में कुपित होकर सम्पन्नता का विपन्नता में बदल देता है। कालीबंगा की सभ्यता के ह्रास के पीछे कई कारण हो सकते हैं। जल प्लावन भी, भू स्खलन भी, ज्वालामुखी फटने के घटना क्रम भी और लगातार होने वाली सूखे और अकाल की घटनाएँ पनपती हैं, प्रकृति के कोप के कारण व ही सभ्यताएँ केवल इतिहास की बाते होकर रह जाती हैं।

## संदर्भ ग्रंथ सूची

1. स्मिता पांडे भारत में जल संसाधन परंपरा, अनमोल जल संसाधन, योजना जुलाई 2016 पृष्ठ संख्या-25
2. सुश्रुत संहिता का 45 अध्याय में पृष्ठ संख्या-26
3. सचिदानंद मुखर्जी आर्थिक विकास में जल संसाधन प्रबंधन 2016 नेशनल इंस्टीच्यूट ऑफ पब्लिक फाईनेंस एण्ड पॉलिसी नई दिल्ली पृष्ठ संख्या-9
4. वाटर एंड सेनिअेशन प्रोग्राम इकोनोमिक इंपेक्ट्स इन एग्रीकल्चर, सैनिटेशन इन इण्डिया, वर्ल्ड बैंक नई दिल्ली प्रकाशन 29 मार्च 2016
5. बिहार समान्यज्ञान प्रकाशन 2016 से प्राप्त
6. हरिश्चन्द्र व्यास जो जीवन है, ग्रंथ अथर्वेद क्रम संख्या-11/5/1-3, ऋग्वेद, यजुर्वेद अ. 6/10, बैदिक ऋषि, वामनपुराण पृ0 सं0-14-26
7. मनुस्मृति में वर्णित, महाकवि कालिदास के मेघदूत, महाकांत कन्द, जयदेव के गीतगोविन्द जैन धर्म गुरुनानक, ईसा एवं इस्लाम धर्म भगवान बौद्धों, अमेरिका की वर्ल्ड वाच संस्था के अध्ययन से प्राप्त पृ0 सं0-45
8. हरिश्चन्द्र व्यास जल जो जीवन है, जल की कौख से उपजी सभ्यताएँ जल संसाधन विभाग बिहार सरकार पटना पर्यावरण एवं सामाजिक क्षेत्र का अर्थशास्त्र पृ0 सं0- 38
9. हरिश्चन्द्र व्यास सिंधु धाटी सभ्यता कालीबंगा द्वारिका नगरी पृष्ठ संख्या-43

# Administration and Management of Human Resources in Indo-Asahi Glass Company Limited, Bhadani Nagar, Jharkhand

Dr. Rudra Kinker Verma\*

## ABSTRACT

Administration is that phase of business activity which relates to the overall determination of the major policies and objectives. Before starting any business, a promoter has to take certain basic decisions, which include various matters such as – the type of enterprise – whether manufacturing, finance, merchandising, mining, transportation, and so on; the particular phase within the type – what article is to be produced in manufacturing; geographic location, as well as specific location of the plant; and a multitude of other decisions, of which the foregoing are illustrations. These basic decisions once taken are by no means final, because the requirements of a dynamic society must be met by constant adjustments. Administration frames the policies and makes the necessary adjustments of a firm. In business firms, administration refers to the higher and policy determining levels, which is concerned with the determination of overall corporate objectives, policies and master strategies.

Management is the process of designing and maintains an environment in which individuals working together in groups efficiently accomplish selected goals. Management applies to any kind of organization. The basic aim is the same – to generate a surplus. People can take a firm to commanding heights. Thousands of men and women spend their times as managers in companies, who confront endless challenges as they strive to complete their day-to-day activities. The management activities are different for every manager. Each and every individual worker is very important for a firm. The following are benefits of strategic human resource management:

- Increased job satisfaction.
- Better work culture.
- Improved rates of customer satisfaction.
- Efficient resource management.
- Proactive approach to managing employees.
- Boost productivity.

The overall purpose of human resources (HR) is to ensure that the organization is able to achieve success through people. HR professionals manage the human capital of an organization and focus on implementing policies and processes. They can specialize in finding, recruiting, training, and developing employees, as well as maintaining employee relations or benefits. Training and development professionals ensure that employees are trained and have continuous development. This is done through training programs, performance evaluations, and reward programs. Employee relations deals with the concerns of employees when policies are broken, such as cases involving harassment or discrimination. Managing employee benefits includes developing compensation

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structures, parental leave programs, discounts, and other benefits for employees. On the other side of the field are HR generalists or business partners. These HR professionals could work in all areas or be labor relations representatives working with unionized employees.

## ADMINISTRATION AND MANAGEMENT OF HUMAN RESOURCES

Earlier administration was used as policy making functions in business enterprises, while management was taken to mean policy-executing functions. In other words planning and organizing were the functions involved in administration, and directing and controlling functions were the special concern of management. It is management, which includes all the four functions of planning, organization, direction and control. All managers irrespective of tier lends ad ranks, are to discharge these functions. In fact, these functions provide the identifying mark by which a manager can be distinguished from non-managers. All undertakings require planning, organization, command, coordination and control, and in order to function properly, all must observe the same general principles. We are no longer confronted with several administrative sciences, but with one which can be applied equally well to public and private affairs (Fayol, 1916).

Administrative and management functions permeate throughout the organizational set-up of the organization. No two separate sets of personnel are required, however, to discharge administrative and management functions. Each manager performs both activities and spends part of his time administrating and part of time managing (Haimann). The higher up in the hierarchy, however, the more time will be spent in administrative activity and the less in management activity in the manager's daily routine. In highly sophisticated modern enterprises, the functions of planning, policy-making, and formulation of basic objectives are vested in the top level of directors, chief executives and expert advisors; whereas the remaining office-bearers are expected to just carry out the mandates issued by the top-boss.

The administrative function is confined to a compact group spelling out broad policies; the details of operation are left to the subordinates executives in the organizational hierarchy.

Management is the sum of the three different steps involved in it –

- (A) Formulation of policy ad its translation into plans,
- (B) Execution and implementation of plans, and
- (C) Exercising administrative control over the plans.

These three tasks can be titled as Planning, Implementing and Controlling. The term Human Resources includes personnel administration, training, development of human environment, development of the natural talents of the people, development of human personality, etc. While the term Physical Resources includes finance or money, raw materials, buildings, plant and machinery and other equipments.

The main function of management is to develop and improve the human resources and its personality that ultimately results in improved productivity. The development of any factory or industry depends upon the development of its people, who handle the physical resources (Saksena).

Workers are the human resources of an organization and its valuable asset. To be successful, an organization needs to make workers productivity a major goal. The level of productivity can vary depending on the skill levels the workers demonstrate in their jobs and the satisfaction levels of the workers with the organization and their jobs. Management of human resources is focused in the following organizational areas –

1. Establishment of a legal and ethical management system
2. Job analysis and job design

3. Recruitment and selection
4. Career opportunities
5. Distribution of workers benefits

## **HUMAN RESOURCES INFORMATION SYSTEMS**

HR professionals generally handle large amounts of paperwork on a daily basis, ranging from department transfer requests to confidential employee tax forms. Forms must be on file for a considerable period of time. The use of Human Resources Information Systems (HRIS) has made it possible for companies to store and retrieve files in an electronic format for people within the organization to access when needed, thereby eliminating the need for physical files and freeing up space within the office.

### **Human Resource Management in Indo-Asashi Glass Company Limited, Bhadabinagar, Jharkhand.**

Mental Revolution is the key to success of any organization. The father of the scientific management F.W. Taylor firmly believed that the objective of management should be the maximum prosperity for the employer and the maximum prosperity to each employee. The prosperity for the employer means lower costs but higher returns. Maximum prosperity to the employee means fair as well as higher wages. It can be achieved through the mentally revolved employer and employee in any organization.

Mental Revolution is an invisible thing. It can't be seen with the open eyes in any organization. It can be felt and realized that in an organization mental revolution exists or not. If the employees of an organization feel that they are an important part of that organization and any wastage of that organization will be the self wastage then it can be said that mental revolution prevails among the employees of that organization. Thus there will be no doubt about the success of the organization where employees are mentally revolved.

For more clarification about the concept of mental revolution we may put an example of F.W. Taylor who evaluated the extent of mental revolution of American labourer. In U.S.A. labourer divided in different groups were breaking stone for road construction. Taylor asked a simple question from the first group of labour what are you doing? They replied we are breaking stone. From this simple answer Taylor remarked that there is no mental revolution among that group of labourer. They feel monotony in their work and therefore cannot work with their full efficiency. When the same question was repeated from the second group of labourer, then they replied that we are building our livelihood. From this answer, it was the opinion of Mr. Taylor that there are mental revolutions among the second group of labourer but up to the limited extent. They think about themselves only. When the same question asked from the third group of labourer then they replied that we are building our nation. From this answer Taylor remarked that mental revolution prevails among the third group of labourer up to the maximum extent. Taylor says that the labourer thought that from these broken stones road transport of U.S.A. will developed and ultimately our country will prosper. With this mentally revolved people of any country will prosper without any doubt. Mental revolution refers to change in thinking both on the part of management, and workers. If not all the majors suggested in scientific management system would be useless.

In the words of Taylor "Scientific management involves complete mental information on the part of workers and management and without this complementally revolution on both sides scientific management doesn't exist." Both sides must aim for cooperation for missing output and give up hostility and suspicion. Both sides should take their eyes off the division of the surplus as the all important matter and together turn their attentions towards increasing the size of the surplus.

Usually the worker's try to keep output low for fear of creating unemployment. Again due to payment on times bases, extra output or increased inefficiency do not benefits the worker's employers also does not take kindly to increase in worker's earning.

The net effect in mutual hostility and suspicion resulting in low profits and lower wages, Worker's should realize that would work being cost down and pulls up profits with a constant rise in wages. The employers should also recognize that if output goes up cost comes down; increased wages will still leave higher profit for them. Therefore, workers should welcome efforts to increase output and cooperate with the employee, employers should readily raise wages. Both must recognize that prosperity of both depends upon the property of each and none should attempt to prosper of the cost of other. Taylor never introduced scientific management without rising wages for it is futile to expect worker cooperation without materials benefits to them.

No doubt scientific management brought new revolution in the field of effective management and advocated to left rule of thumb where there is no chance of wastage. Thus, the success of imputation of scientific management depends on the mental revolution of management and worker. As Taylor says "The success of scientific management rests primarily on the fundamental change in the attitude of management and workers both as to their duty to cooperate in producing the largest possible surplus and to the necessity for substituting adjust scientific knowledge for opinion or old rule of thumb of individual knowledge.

Some concepts and positive effect of mental revolution we may observe that Taylor's idea led to a powerful scientific management movement in the united State and other western countries. The movement led to significant improvement in productivity and remuneration of workers. Taylor laid the foundation for scientific study of management as a separate discipline. Human Resource Management (HRM) is concern with the people in management. HRM is the term increasingly used to refer the philosophy, policies producers and practices relating to the management of the people within organizations. Since every organization is made up of people, acquiring their success, developing their skills, motivating them to higher level of performing and ensuring that they continue to maintain their commitment to the organization which are essential in achieving organizational objectives.

Organization able to acquire, develop stimulate and keep outstanding workers will be both effective and efficient.

Human Resource thus creates organizations and makes them survive and prosper. Human resources are neglected or mismanage, the organization is unlikely to do well. HRM is an approach to the management of people, based on four fundamental principles.

- (i) Human Resources are the most important assets of an organization and their effective management is the key to its success.
- (ii) This success is most likely to be achieved in the personnel policies and procedures of the enterprise are closely linked with, and make a major contribution to the achievement of corporate objectives and strategic plans.
- (iii) The corporate culture and the values, organizational climate and managerial behavior that emanate from that cultural will exert a major influence on the achievement of excellence.
- (iv) H.R.M. is concerned with intrigaliving getting all the members of the organizations involved and working together with a since of common purpose in its essence, HRM is the Qualitative improvement of Human beings who are considered the most valuable asset of an organization. The Resource, sources, and end users of all products and services. HRM is, no doubt an outgrowth of the older process and approach but it is much more than its parent disciplines that is personnel management and behavioral science.

The main products of IAG co. Ltd. is Sheet Glass and Figured Glass, which are used for show rooms, vehicles, building purpose, mirrors, safety glasses, microscope glass etc.



The Sheet glass, which the factory produces, is 2.0 mm to 5.5 mm in thickness and the Figured glass is 3.0 mm to 6.0 mm in thickness. The factory produces 56,20,000 cases of Sheet glass per year and 82,70,000 cases of Figured glass annually. The IAG Co. Ltd. employs total manpower of 1363, including executive and peace rated permanent workers. It also has an average employment of casual workers about 60 (approx.) on daily basis.

## Objective of Administration and Management of Human Resources

The primary objective of the administration and management of human resource is to ensure the availability of competent and willing workforce to an organization. The specific objectives include the following –

1. Human capital – assisting the firm in obtaining the right number and types of employees to fulfill its strategic and operational goals.
2. Developing organizational climate – helping to create a climate in which employees are encouraged to develop and utilize their skills to the fullest to employ the skills and abilities of the workforce efficiency.

## CONCLUSION

HRM is also more comprehensive and deep rooted than training and development. The INDO-ASAHI Glass Company situated at Bhadaninagar, Jharkhand producing bullet proof glass and having second position in Asian Sub continent and running on the path of success by leaps and bounds. I observe its reason of success that this enterprise adopts the basic approach of HRM to perceive the organization in its totality. Its emphasis is not only on production and productivity but also on the quality of life. It seeks to achieve the fullest development of human resources and the fullest possible Socio-economic development. The key factor of its success is its employees who are mentally revolutioned up to the maximum extent. Its employees fructify that we are an important member of our Indo-Asahi Glass Company Limited.

It can be expected that this enterprises will fructify in future also with their mentally revolutioned Human resources. The company got Manufacturing Excellence Award and Best HR Initiatives Award. The company appointed Mr. Gurvinder Singh Talwar (Rana Talwar) as additional Director (Independent capacity) w.e.f. 20 December, 2012.

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# Aquatic Angiosperms with Reference to River Kosi Region (Bihar)

Bharti Kumari\*

## ABSTRACT

There are many aquatic angiosperms in the river Kosi Region. Some of these Aquaticflora and fauna are useful and having very high economic values.

Experimentally the investigation concerned with the Aquatic Angiosperms of the river Kosi region having 141 species distributed in 80 Genera and 42 families.

Further the economic utilization of some Aquatic plants i.e. *Euryale ferox* (Makhana) and *Trapa bispinosa* (Waternut- Singhara) are very good. Both of Aquatic flora needs thorough investigations and exploring cultivation. Modern production technologies are value in this region. These two Aquatic Angiosperms may prove diamond and gold of wetlands of this region.

**Keywords:** *Euryale ferox*, *Trapa bispinosa*

## INTRODUCTION

Wetlands are the hydric soil where a plenty of Aquatic flora and fauna are found. A wetland may be either permanent or seasonally. In Bihar, there are many rivers and dhars. In the kosi region especially kosi and punnea division of Bihar. There are numbers of permanent and seasonal rivers and dhars. Most of them are due to the river kosi. As the river kosi is the most ancient and famous for changing its course. It is remarkable for the rapidity of streams, the dangerous and uncertain nature of its banks and the desolation which is flood causes. The past history of the river kosi is the history of different courses which adopted in successive decades. During the last two hundred years, this river has been generally changing its courses. It has shifted across a width of over more than 100 km. in these movements it has laid large tracts and fertile agricultural land.

The changes that take place in the courses of the river kosi are not due to the ordinary meandering at river as a whole. The apparent causes of rapid changes in the river is heavy silt charge it carries in suspension and the detritus that move along its bed. The natural gradients of the country is good enough to carry the silt free monsoon flow translation takes place. In the process of translation the river kosi monopolises the course of various independent dhars, viz., kankaidhar, parmaandhar, kamala dhar, tilvedhar, dhamaharadhar, balandhar, balandharetc and so many revolutes. Due to this characteristic kosi is known as a very notorious river. Due to these dhars most of the areas of kosi region causes flood mostly in rainy season. Due to flood in these rivulets there causes so many wetlands in seven districts Saharsa, Madhepura, Supaul districts under kosi division while Purnea, Katihar, Kishanganj and Araria districts under punnea division situated between latitude 25° 26' 36" N to 26° 33' 45" N and between 86° 18' 33" to 87° 8' 0" E. most of these wetlands are permanent. Chauras, chaps marshy lands and water logged areas due to frequent change in course of the river kosi. Most of them are rich of aquatic flora and aquatic fauna. Most of them are very useful to people of this area. These days it has been growing for commercial value rapidly. Some of these aquatic flora may prove of very high economic values.

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## METHODOLOGY

The investigation and research work is related to several aquatic angiosperms of the books of Prain (1903) and H. H. Haines (botany of Bihar and Orissa, 1921-25), J. G. Srivastava's report on the flora of Purnea in the journal of Indian Botanical Society and vegetation of Purnea district by P. C. Roy Chaudhary in 1986 made research work easy.

The present research work is based on the result of several years of critical and intensive study of aquatic angiosperms of river Kosi. Especially of Kosi and Purnea division of Bihar.

## DISCUSSION

The present work is the area through which the main channel of Kosi river flows. It is to be noted that Kosi river changed its course over 104 km. during last century. With frequent change in river Kosi flood became a history of general devastation and logging of the sufficient horizons bring about reducing temporary chemical climate physical changes to take place. Climate and other factors are responsible for the distribution of aquatic and wetland plants in this area. The flood plains area dominated by grasses, bushes and other non-woody aquatic plant, the development is called "Marsh" and the vegetation is large bushes is called "Swamp".

Further a large amount of water during flood results in number of chauras, dhars, ditches and rivulet throughout the area of river Kosi and it is an ideal for the growth and development of aquatic angiospermic plant in this region.

The old channel of river Kosi is devoid of any vegetation but during rains, near their margins, a lot of aquatic angiosperms like *Panicum* sp., *Pistia* stratiotes, *Monochoria* hastata and *Eichhornia* crassipes are the dominant plants.

The marshes and swamps are formed near and radiating from the river Kosi and the old channels. They harbour a lot of aquatic vegetation. In the middle are seen submerged plants like *Hydrilla* verticillata, *Ceratophyllum* demersum, *Utricularia* inflexa, *Utricularia* staltaris and floating plants like *Pistia*, *Lemna* etc. nearer the banks are found the rooted immersed plants like *Limnophila* spp., *Cyperus* spp., *Monochoria* hastata and various lotus (*Nelumbo*) etc. still nearer are seen *Butomus* umbellatus, *Alisma* plantago, *Lippia* geminata and various species of *Polygonum*. *Aeshynomonea* aspera, *Aeshynomonea* india and growing on the damp banks and extending their branches on the surface of water area seen *Neptunia* oleracea, *Cyanotis* axillaris, *Ipomea* repens, *Jussiaea* repens and *Caesulia* axillaris etc.

The borders of the marshes and swamps and the low banks of the old channels where the soil is very wet and rich in organic matter. Such banks as area covered over with grassland flora like *Vetiver* lazisoniodes, *Pharmgmitis* karka, *Arundo* donex, *Elusine* spp., various species of *Cyperus* etc.

The old ditches show many aquatic like *Aponogeton* spp, *Potamogeton* spp., *Ipomea* spp., *Lemna*, *Wolffia* etc are found. However, during the survey in the region of Kosi river, the following aquatic angiosperms have been found and studied in details, they are...

## DICOTYLEDONS

Family	Genera	Species
<b>1. Ranunculaceae</b>		
Ranunculus sceleratus L.	1	1
<b>2. Nymphaeaceae</b>	3	4
Euryale ferox salis		
Nymphaea pubescens wild		
Nymphaea nuphar Goetn.		

NelumbonuciferaGoetrn		
NelumbonuciferaGeartn		
<b>3. Poyulaceae</b>	1	1
Potulaceapilosa L.		
<b>4. Caryophyllaceae</b>	2	3
Stellaria media (L) Vill		
Polycarpaeacorymbose (L) Lamk		
Polycarponprostratum (Forsk) Aschers		
<b>5. Tiliaceae</b>	1	1
Triumfetta rhomboids jacq.		
<b>6. Elatinaceae</b>	1	1
BergiaammanoidesRoxb.		
<b>7. Zygophyllaceae</b>	1	1
Tribulusterrestris L.		
<b>8. Oxalidaceae</b>	1	1
Oxalis corniculata L.		
<b>9. Papilionaceae</b>	3	5
Aeschnomeneaspera L.		
Aeschynomenaindica L.		
Desmodiumgangeticum (L.) DC.		
Desmodiumtriflorum (L.) DC.		
Desmodiumtriflorum (L.) DC.		
Sesbaniabispinosa(Jacq.) W.F.		
<b>10. Caesalpinaceae</b>	1	1
Caesalpinia digyna Rottle.		
<b>11. Mimosaceae</b>	1	1
Albizia procera (Roxb.) Benth.		
Mimosa pudica L.		
<b>12. Rosaceae</b>	2	2
Rosa involuncreta Roxb.		
Potentialla supine L.		
<b>13. Lythraceae</b>	2	3
Ammaniabaccifera L.		
Ammaniamultiflora Roxb.		
Rotella indica (Wild) Kochne		
<b>14. Onagraceae</b>	1	4
Ludwigia adscendens (L.) Hara		
<b>15. Trapaceae</b>	1	1
Trapaceae bispinosa Robx.		
<b>16. Umbelliferae</b>	1	1
Centella asiatica (L.) Urban.		
<b>17. Rubiaceae</b>	2	4
Dentella repens (L.) Forst		
Dentella serphyllifolia wall.		
Oldenlandia corymbosa L.		
Oldenlandia diffusa (willd.) Roxb.		
<b>18. Asteraceae (compositae)</b>	7	7

Caesulia axillaries Roxb.		
Centipeda minima (L.) A. Br.		
Ecliptaalba (L.)		
EnydrafluctuansLour		
Grangeamaderaspatna (L.)Poiret		
Sphaeranthusidicus L.		
Spilanthesuliginosa Swart.		
<b>19. Lentibularaceae</b>	1	3
UrticulariaaureaLour.		
UtriculariainflexaForsskal.		
Utriculariastellaris L.		
<b>20. Hydrophyllaceae</b>	1	1
Hydroleazeylanica (L.)Vahl		
<b>21. Convolvulaceae</b>	1	3
Ipomoea aquatic Forsskal		
Ipomoea fitulosaMartius		
Ipomoea batatus (L.)Lanik		
<b>22. Boraginacea</b>	2	5
Bothriospermumtenellum (Hornem.)Fisch		
Coldeniaprocumbens L.		
Heliotropiuminidcum L.		
HeliotropiumovalifoliumForsskal.		
Heliotropiumstrigosum Wild.		
<b>23. acanthaceae</b>	1	3
Hygrophillaauriculata (schumach) heine		
Hygrophilladiformis (L.)Blume		
Hygrophillapolysperma (Roxb.) T. Anders		
<b>24. Scrophulariaceae</b>	5	9
Bacopamonneri (L.) Pennell.		
Centratheratraqucbarica (Sprengel) Merrill.		
Linderniaantipoda (L.)Alst.		
Linderniaciliata (Colsmann) pennel		
Linderniacrustacea (L.) F.V. Mueller		
Linderniapusilla (Willdenow) Boldingh		
Limnophilaindica (L.)Druce		
Limnophilachinensis (Osbeck) Merrill		
Verbascumchinensis (L.) chinensis (L.)Santapau		
<b>25. Verbenaceae</b>	2	2
Lippiajavnica (Burm. F.) Spreng.		
Phyla modiflora (L.) Greene		
<b>26. Lamiaceae</b>	2	2
DysophyllaverticillataBenth		
Pogostemonbenghalence (Burm.) O. Kuntze		
<b>27. Amarantaceae</b>	1	4
Alternantherapafroynchoides St. Hil.		
Alternantheraphiloxeroides (Martius) Grisebach		
AlternantherapungensKunth		

Althernantherasessilis (L.) R. Br.		
<b>28. Polygonaceae</b>	1	8
Polygonumbarbatum L.		
PolygonumglabrumWillenow		
Polygonumhydropiper L.		
Polygonumlanigerum R. Br.		
Polygonumorientale L.		
Polygonumpubescens Blum.		
Polygonumplebeium R. Br.		
PolygonumviscosumBuch.		
<b>29. Ceratophyllaceae</b>	1	1
Ceratophyllumdemersum L.S.		

### Monocotylendons

<b>1. Hydrochariataceae</b>	1	3
Hydrillaverticillata (L. F.)Royle		
Otteliaalismoides (L.)Pers.		
Vallisneriaspirallis L. vardenserrukata		
<b>2. Juncaceae</b>	1	1
Juncusprismatocarpus R. Br.		
<b>3. Typhaceae</b>	1	1
Typha elephantine Roxburgh		
<b>4. Araceae</b>	2	2
Colocasiaesculenta (L.)		
PistiastratiotesL.		
<b>5. Lemnaceae</b>	3	4
lemnanaequantotaliswelwitsch		
lemnna minor L.		
spirodelapolyrhiza (L.) schleiden		
wolffiaglobosa (Roxburg) den hartog		
<b>6. Alismataceae</b>	1	2
SagittariaguayanensisHumbolt		
Sagittariasagittifolia L.		
<b>7. butomaceae</b>	1	1
Tenagocharislatifolia (D. Don) Buchen		
<b>8. aponogetonaceae</b>	1	1
Aponogetonnatans (L.)Engler		
<b>9. potamogetonaceae</b>	1	3
Potamogetoncrispus L.		
Potamogetonnodosuspoiret		
Potamogetonpectinatus L.		
<b>10. Najadaceae</b>	1	1
Najasgraminea Del.		
<b>11. Zannichelliaceae</b>	1	1
Zennichelliapalustris L.		
<b>12. cyperaceae</b>	8	27

Bulbostylis densa (Wallich) Handel		
Cyperus alopecuoides Rottb.		
Cyperus compressus L.		
Cyperus corymbosus Rottb.		
Cyperus difformis L.		
Cyperus distans L.		
Cyperus exalatus Retz.		
Cyperus siria L.		
Cyperus pilosus Vahl.		
Cyperus pygmaeus Rottb.		
Cyperus rotundus L.		
Cyperus tenuispicatus Steud.		
Eleocharis dulcis (Burm.) Henschel		
Eleocharis palustris (L.) R.Br.		
Fimbristylis aestivalis (Retz.) Vahl.		
Fimbristylis companata (Retz.) Link		
Fimbristylis dichtoma (L.) Vahl		
Fimbristylis littoralis Gandh.		
Fimbristylis miliacea (L.) Vahl		
Fimbristylis schoenoides (Retz.) Vahl.		
Fimbristylis tetragona R. Br.		
Fuirena ciliaris (L.) Roxb.		
Kyllingia brevifolia Rottb.		
Lipocarpus sphaelata (Vahl) Kunth		
Mariscus compactus (Retz.) Bolding		
Mariscus sumatrensis (Retz.) Royan		
<b>13. Poaceae</b>	9	14
Arundo donax L.		
Brachiaria mutica (Forsk.) Stapf.		
Brachiaria ramosa (L.) Stapf.		
Brachiaria reptans (L.) Gardner		
Coix lacryma-jobi L.		
Echinochloa colona (L.) Link		
Echinochloa crus-galli (L.) P.Beauv.		
Ischaemum rugosum Salis.		
Leersia hexandra Sw.		
Panicum paludosum Roxb.		
Panicum repens L.		
Paspalum flavidum (Retz.) A. Camus		
Paspalum punctatum (Burm.) A. Camus		
Paspalum scrobiculatum L.		

## CONCLUSION

In this research work, plants are mainly concerned with aquatic angiosperms of the river Kosi having 141 species distributed in 80 Genera and 42 families. Further the details analysis show the following data-

	Families	Genera	Species
DICOT	29	49	80
MONOCOT	13	31	61
TOTAL=	41	80	141

Further the economic utilization of aquatic plants needs thorough investigation and exploring of the cultivation of *TrapaBispinosa* (Waternut- Singhara) and *Euryale ferox* (makhana) require modern production technology to raise its productivity and economic value of this region.

Lastly conservation of aquatic angiosperms, weeds and wetland plants of the river Kosi is a matter of further research project of the nation.

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# Bamboo : A Unique Grass for House Building Material

Dr. Rudra Kinker Verma\*

## ABSTRACT

Bamboo can be utilized as a building material for scaffolding, bridges, houses and buildings. Bamboo, like wood, is a natural composite material with a high strength-to-weight ratio useful for structures. Bamboo's strength-to-weight ratio is similar to timber, and its strength is generally similar to a strong softwood or hardwood timber. Bamboos are some of the fastest-growing plants in the world, due to a unique rhizome-dependent system. Certain species of bamboo can grow 35 inches/89 cm within a 24-hour period, at a rate of 0.00003 km/h (a growth of approximately 1 millimeter (or 0.02 inches) every 2 minutes). Bamboo has been intensively utilized as a building material since ancient times. However, due to western architectural influences, this sturdy building material got sidelined over years. Although India is the second largest producer of bamboo in the world, there is lack of awareness of its uses in building houses or home furnishings. This void has led a few entrepreneurs and organizations in India to promote and provide bamboo house and handicrafts for everyday use as a substitute. They have adopted several innovative techniques that could sustain the environment by imbibing traditional and natural methods along with modern technology for building houses, which are not only cost effective but also eco-friendly.

## INTRODUCTION

Bamboo House India was established in 2008 by a young couple named Prashant Lingam and Aruna Kappagantula. Initially, they started with designing bamboo based furniture and eventually ventured into building houses with the motive of solving the problem of expensive housing. They have built around 60 houses in and around Hyderabad with prices starting from INR1 lakh. Due to the low cost and easy availability of materials in villages, Prashant and Aruna took forward their mission to rural areas of Nizamabad district in Telangana and Anantapur district in Andhra Pradesh, and have expanded its venture to other states like Maharashtra. Bamboo House India is not only limited to housing, but also handle other projects for resorts, marriage halls, schools and toilets. In addition to their accolades, they have successfully designed interiors for software companies like Google and Infosys to name a few.

## GENERAL USES

- Soil stabilization, wind break, urban waste water treatment and reduction of nitrates contamination
- Creating a fire line in traditional forests-due to the high content of silica.
- Removing atmospheric carbon- bamboo can capture 17 metric tons of carbon per hectare per year, i.e., effectively than any other species.

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- The shoots are edible.
- Building and construction.
- Small scale and cottage industries, for handicrafts and other products.
- New generation products as wood substitutes
- Industrial products
- Transportation industry- truck bodies, railway carriages etc.
- Boards and furniture
- Medicine
- Paper and pulp industry
- Long time source of biomass for industry
- Fuel source- capable of generating 1000-6000 cal/g- for households and small industries is an age-old, continuing practice.

## PROPERTIES

### Tensile Strength

Bamboo is able to resist more tension than compression. The fibres of bamboo run axial. In the outer zone are highly elastic vascular bundle, that have a high tensile strength. The tensile strength of these fibres is higher than that of steel, but it's not possible to construct connections that can transfer this tensile strength. Slimmer tubes are superior in this aspect too. Inside the silicated outer skin, axial parallel elastical fibers with a tensile strength upto 400 N/mm<sup>2</sup> can be found. As a comparison, extremely strong wood fibers can resist a tension upto 50 N /mm<sup>2</sup>.

### Compressive Strength

Compared to the bigger tubes, slimmer ones have got, in relation to their cross-section, a higher compressive strength value. The slimmer tubes possess better material properties due to the fact that bigger tubes have got a minor part of the outer skin, which is very resistant in tension. The portion of lignin inside the culms affects compressive strength, whereas the high portion of cellulose influences the buckling and the tensile strength as it represents the building substance of the bamboo fibers.

### Elastic Modulus

The accumulation of highly strong fibers in the outer parts of the tube wall also work positive in connection with the elastic modulus like it does for the tension, shear and bending strength. The higher the elastic modulus, the higher is the quality of the bamboo. Enormous elasticity makes it a very useful building material in areas with very high risks of earthquakes.

### Anisotropic Properties

Bamboo is an anisotropic material. Properties in the longitudinal direction are completely different from those in the transversal direction. There are cellulose fibers in the longitudinal direction, which is strong and stiff and in the transverse direction there is lignin, which is soft and brittle.

### Shrinkage

Bamboo shrinks more than wood when it loses water. The canes can tear apart at the nodes. Bamboo shrinks in a cross section of 10-16 % and a wall thickness of 15-17 %. Therefore it is necessary to take necessary measures to prevent water loss when used as a building material.

## Fire Resistance

The fire resistance is very good because of the high content of silicate acid. Filled up with water, it can stand a temperature of 400° C while the water cooks inside.

## BAMBOO HOUSING

The majority of bamboo construction relates to the rural community needs in developing countries. As such domestic housing predominates and in accordance with their rural origins, these buildings are often simple in design and construction relying on a living tradition of local skills and methods. Other common types of construction include farm and school buildings and bridges. Further applications of bamboo relevant to construction include its use as scaffolding, water piping and as shuttering and reinforcement for concrete. In addition, the potential number of construction applications has been increased by the recent development of a variety of bamboo-based panels.

## DOMESTIC HOUSING AND SMALL BUILDINGS

There is a long-standing tradition of bamboo construction, dating back to many hundreds of years. Different cultures have found in this material an economical system of building, offering sound yet light and easily replaceable forms of shelter. The methods, activities and tools are often simple, straightforward, accessible even to the young and unskilled. Despite human exploitation and unfavorable treatment, trees maintain its contributively role towards the dwelling of mankind. Man has for centuries enjoyed the benefits of the free gift of nature.

Housing is one of the priority items and sensing the current shortage of the dwelling units, the present administrative leaders around the world find tough to hit upon a solution for. The search for an efficient economical and replicable housing solution based on the contextual needs is the need of the hour. Apart from the other substances already in practice, bamboo appears to be the most promising material. Bamboo building construction is characterized by a structural frame approach similar to that applied in traditional timber frame design and construction. In this case, the floor, the wall, the roof elements are all interconnected and often one dependent on the other for overall stability.

Bamboo culms are used in building. The thicker culms or strands made up of several culms are employed for load bearing materials such as girder, purlin, post or rafter. Bamboo based materials are widely used too. In its natural condition as solid culms, halved culms or as longitudinally split strips, bamboo has been used in almost all parts of house construction except for the fireplace and the chimneys. These are described in detail below:

## Foundation

The use of bamboo for foundation is rather restricted. This is mainly due to the fact that like timber when in contact with damp ground, they deteriorate and decay very quickly unless treated with some very effective preservatives. However, in spite of their short life considerable use of bamboos is made as foundation or supporting posts in case of houses built on raised platforms. The types of bamboo foundations identified are:

- (a) Bamboo in direct ground contact: Bamboo is placed either on the surface or buried. For strength and stability, large diameter and thick walled sections of bamboo with closely spaced nodes should be used. Where these are not available, smaller sections can be tied together. It can decay within six months to two years, and hence preservative treatment is recommended.

- (b) Bamboo on rock or preformed concrete footings: where bamboo is being used for bearings, it should be placed out of ground contact on footings of either rock or preformed concrete. The largest and stiffest sections of bamboo should be used.
- (c) Bamboo incorporated in to concrete footings: the poles are directly fit into concrete footing. It can take the forms of single posts or strip footings.
- (d) Composite bamboo/concrete columns: a concrete extension is given to a bamboo post using a plastic tube of the same diameter. The result is a bamboo post with an integral durable foundation.
- (e) Bamboo piles: it is used to stabilize soft soils and reduce building settlement. The treated split bamboo piles were filled with coconut coir strands wrapped with jute. The sections were then tied with wire. After installation of the piles the area was covered with a sandy material.

## Flooring

The floors may be at ground level, and therefore consists only of compacted earth, with or without a covering of bamboo matting. The preferred solution is to raise the floor above the ground creating a stilt type of construction. This improves comfort and hygiene and can provide a covered storage area below the floor. The surface of earth floor is sometimes made more stable by paving it with crude bamboo boards made by opening and flattening whole culms. The various types used are:

- (a) Small bamboo culms: they are directly tied and nailed together.
- (b) Split bamboo: culms are split along their length into strips, several centimeters wide.
- (c) Flattened bamboo: formed by splitting green bamboo culms removing the diaphragms, then rolling and flattening them. The resulting board is laid across the joists and fixed by nailing or tying. They are screeded with cement mortar for reasons of hygiene and comfort as they are uneven and difficult to clean.
- (d) Bamboo mats: thin strips varying in size from 5-6mm or 10-15mm and thickness of 0.6-1.2mm. These slivers are then woven into mats of different sizes according to the available hot-press plates and user's demands. After drying the mats to 6-10% moisture content, sufficient glue is applied to ensure enough bonding between the overlapped areas. In construction using bamboo mats, phenolic resins are employed.
- (e) Bamboo plastic composites: it is an innovative technology in which bamboo fiber is the raw material and compounded with plastic as the core material of the flooring. This has higher water resistance and dimensional stability properties than those of normal floorings.

The ratio of plastic should be over 30% for higher water resistance and dimensional stability. Polypropylene is recommended, and if recycled plastic is used it is ideal to reduce the cost of production. The density of substrate should be higher than  $1\text{gm/cm}^3$  to ensure best mechanical properties. It prevents the floor from swelling and cracking, which is the disadvantage of other timber based flooring materials.

## Walls

The most extensive use of bamboo in construction is for the walls and partitions. The major elements, the posts and beams, generally constitute part or structural framework. They are to carry the self-weight of building and loads imposed by the occupants and the weather. An infill between framing members is required to complete the wall. The purpose of the infill is to protect against rain, wind and animals, to offer privacy and to provide in plane bracing to ensure the overall stability of the overall structure when subjected to horizontal forces.

## Roofing

The roof offers protection against extremes of weather including rain, sun and wind, and to provide shelter, clear and usable space beneath the canopy. Above all it must be strong enough to resist the considerable forces generated by wind and roof coverings. In this respect, bamboo is ideal as a roofing material- it is strong, resilient and light weighted. The bamboo structure of a roof can comprise of purlins, rafters and trusses.

- (a) The simplest form consists of a bamboo purlin and beams, supported on perimeter posts. Halved culms are then laid convex side down, edge-to-edge, spanning from the ridge to the eaves. A second layer, convex side up, is then laid to cover the joints.
- (b) Corrugated sheets made out of bamboo are also used commonly as roof covering. The bamboo mats are dipped in resin, dried and heat pressed under pressure in a specially made platen, to give strong, reliable sheets of bamboo, which is lightweight. It has good insulation properties too.
- (c) A layer of bitumen is sandwiched between two mats of bamboo forming a semi rigid panel. The mats can be fixed to rafters at 200-250mm center to center. A bituminous or rubberized weatherproof coating is then applied to the finished roof.
- (d) Plastered bamboo: A cement plaster, with or without the addition of organic fibres, is traditionally applied to bamboo roofs, to get stronger roof coverings. Various forms of trusses are also adopted using bamboo culms of diameter ranging from 40mm-100mm. The king post trusses are the most common and the simplest.

## Scaffolding

Because of the favourable relationship between load-bearing capacity and weight, bamboo can be used for the construction of save scaffoldings even for very tall buildings. Even at their connections the canes are not treated in any way. Only lashed joints are used. The cane extension is carried out by lashing the cane ends together with several ties. The ties are arranged in such a way that a force acting vertically downwards wedges the nodes in the lashing. With larger cane diameters the friction can be increased by tightening the rope between the canes. The vertical and horizontal canes used for scaffolding are almost exclusively joined using soft lashing. This technique has the great advantage that the joints can be re-tensioned to the right degree without difficulty and also quickly released again.

## ADVANTAGES OF BAMBOO

The various advantages of bamboo are mentioned below.

- Light, strong and versatile.
- Light, strong, versatile.
- Environment friendly.
- Accessible to the poor.
- Self renewing resource
- Fast growing.
- Highly productive.

## DISADVANTAGES OF BAMBOO

**The major disadvantages of bamboo are as follows:**

- Requires preservation

- Shaped by nature
- Durability- bamboo is subjected to attack by fungi, insects; for this reason, untreated bamboo structures are viewed as temporary with an expected life of not more than 5 years.
- Jointing- although many jointing techniques exist, their structural efficiency is low.
- Lack of design guidance and codes.
- Prone to catch fire very fast by the friction among the culms during wind, and is seen to cause forest fires.

## CONCLUSION

Forestry practices which aim at provides goods and benefit to a nearby society are usually referred to as Social forestry (Tewari 1992). In India, forests have always played an important role in bettering the lives of the local population. Bamboo is one of the most important multipurpose species and therefore, it is being introduced in a large scale under various programmes of social forestry. It is a domestic arbores cent grass and villagers like to plant it home gardens, around wells, compounds and in the agricultural fields (Shanmughavel, et al., 1997). Bamboo is highly versatile. It is capable of growing in a variety of soils derived from different parent rocks, within its climatic habitats. Bamboo has also been planted on a large scale along roadsides and canals. It is also planted in degraded forest areas particularly near habitations. This can also be planted on agricultural fields and homestead plantations. However no reports available so far, about the performance of bamboo in social forestry. The present work was undertaken to assess the performance of bamboo in various programmes of social forestry in India. In social forestry programmes bamboo is grown mainly in the following systems. On account of the enforcement of our natural forest protection project, wood is becoming increasingly scarce. The realization that bamboo is the most potentially important non-timber resource and fast-growing woody biomass, has evoked keen interest in the processing, preservation, utilization and the promotion of bamboo as an alternative to wood. The properties as top grade building material and increased availability of bamboo in our country makes it possible to use, bamboo in the field of construction extensively. Its high valued utilization not only promotes the economic development, but also saves forest resources to protect our ecological environment as a wood substitute.

As an economic building material, bamboo's rate of productivity and cycle of annual harvest outstrips any other naturally growing resource, if today you plant three or four structural bamboo plants, then in four or five years later you will have mature clumps, and in eight years you will have enough mature material to build a comfortable, low cost house.

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# भारत के प्राचीन क्षत्रिय की स्थिति का ऐतिहासिक अनुशीलन

डॉ. इन्दु भूषण\*

## भूमिका

प्राचीन भारत के विराट सामाजिक, राजनीतिक तथा सांस्कृतिक इतिहास क्षत्रियों की गौरवशाली स्थिति और कालांतर में इसकी दुर्दशा एक महत्वपूर्ण अनुशीलन का विषय हैं। इस देश की वर्णव्यवस्था वाली परम्परा में क्षत्रियों की गौरवशाली अतीत रही हैं। ब्राह्मण और क्षत्रिय प्रतिद्वन्द्विता के भी साक्ष्य भरे पड़े हैं, विश्वमित्र और वशिष्ठ इसके उदाहरण हैं। क्षत्रिय समाज और देश के रक्षक थे, तथा ब्राह्मण धार्मिक और आध्यात्मिक क्षेत्र में भी अपने प्रभुत्व के लिए संघर्ष चलाता आ रहा हैं, उपनिषद काल में आकर यह संघर्ष और भी बढ़ गया जब एक ओर हम राजर्षि जनक ने अध्यात्म ज्ञान के क्षेत्र में क्षत्रियों का नेतृत्व किया, वही दूसरी तरफ परशुराम और द्रोणाचार्य जैसे ब्राह्मण को युद्ध क्षेत्र में शस्त्र के साथ पाते हैं बेसक ब्राह्मणों ने भारतीय समाज और संस्कृति के सभी क्षेत्रों में अपना वर्चस्व कायम रखने के लिए संघर्ष जारी रखा, परंतु क्षत्रियों ने जिनकी स्थिति प्रशासनिक और सैन्य दृष्टि से सुदृढ़ थी, ब्राह्मण के जन्मना श्रेष्ठता को चुनौती दी और आध्यात्मिक क्षेत्र में भी प्रामाणिकताको प्रतिस्थापित किया जिसका निर्धारण किसी जाति या वर्ण विशेष के रूप में नहीं बल्कि कर्म और चरित्र के आधार पर ही किया।

## क्षत्रिय युग

क्षत्रियों की उत्पत्ति के संबंध में इतिहास में दो मत प्रचलित हैं। कर्नलटोड वस्मिथ आदि के अनुसार क्षत्रिय वह विदेशी जातियाँ हैं जिन्होंने भारत पर अतिक्रमण किया था। चंद्रबरदाई लिखते हैं कि परशुराम द्वारा क्षत्रियों के सम्पूर्ण विनाश के बाद ब्राह्मणों ने आबू पर्वत पर यज्ञ किया व यज्ञ कि अग्नि से चौहान, परमार, गुर्जर—प्रतिहार व सालंकी राजपूत वंश उत्पन्न हुए। इसे इतिहासकार विदेशियों के हिंदू समाज में विलय हेतु यज्ञ द्वारा शुद्धिकरण की पारम्परिक घटना के घटना के रूप में देखते हैं। दूसरी ओर गौरीशंकर हीरचंद ओझा आदि विद्वानों के अनुसार क्षत्रिय विदेशी नहीं हैं। अपितु प्राचीन क्षत्रियों की ही संतान हैं। राजरंगिणी में 36 क्षत्रिय कुलों का वर्णन मिलता है। कुछ विद्वान राजपूतों की उत्पत्ति अग्निकुंड से उत्पन्न बताते हैं। यह अनुश्रुति पृथ्वीराज रासो (चन्द्रबरदाईकृत) के वर्णन पर आधारित है। पृथ्वीराज रासो के अतिरिक्त 'नवसाहसांक' चरित, 'हम्मिररासो', 'वंशभास्कर' एवं 'सिसाणा' अभिलेख में भी इस अनुश्रुति का वर्णन मिलता है। कथा का संक्षिप्त रूप इस प्रकार है—

जब पृथ्वी दैत्यों के आतंक से आक्रांत हो गयी, तब महर्षि वशिष्ठ ने दैत्यों क विनाश केलिए आबू पर्वत पर एक अग्निकुण्ड का निर्माण कर यज्ञ किया। इस यज्ञ की अग्नि से चार योद्धाओं—प्रतिहार, परमार, चौहान एवं चालुक्य की उत्पत्ति हुई। भारत में अन्य क्षत्रिय वंश इन्हीं की संतान हैं। 'दशरथशर्मा', 'डॉ. गौरीशंकरओझा'

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एवं 'सी.वी. वैद्य' इस कथा को मात्र काल्पनिक मानते हैं। विदेशी उत्पत्ति के समर्थकों में महत्वपूर्ण स्थान 'कर्नलजेम्सटॉड' का है। वे क्षत्रियों को विदेशी सीथियन जाति की सन्तान मानते हैं। तर्क के समर्थन में टॉड ने दोनों जातियों की सामाजिक एवं धार्मिक स्थिति की समानता की बात कही है। उनक अनुसार दोनों में रहन-सहन, वेश-भूषा की समानता, मांसाहार का प्रचलन, रथ के द्वारा युद्ध को संचालित करना, याज्ञिक अनुष्ठानों का प्रचलन, अस्त्र-शस्त्र की पूजा का प्रचलन आदि से यह प्रतीत होता है कि क्षत्रिय सीथियन के ही वंशज थे।

क्षत्रिय उत्तर भारत का एक क्षत्रिय कुल। यह नाम राजपुत्र का अपभ्रंश है। राजस्थान में क्षत्रियों के अनेक किले हैं। दहिया, राठौर, कुशवाहा, सिसोदिया, चौहान, जादों, पंवार आदि इनके प्रमुख गोत्र हैं। राजस्थान को ब्रिटिश काल में राजपूताना भी कहा गया है। पुराने समय में आर्य जाति में केवल चार वर्णों की व्यवस्था थी, किन्तु बाद में इन वर्णों के अंतर्गत अनेक जातियाँ बन गईं। क्षत्रिय वर्ण की अनेक जातियों और उनमें समाहित कई देशों की विदेशी जातियों को कालांतर में क्षत्रिय जाति कहा जाने लगा। कवि चंद बरदाई के कथनानुसार क्षत्रिय की 36 जातियाँ थी। उस समय में क्षत्रिय वर्ण के अंतर्गत सूर्यवंश और चंद्रवंश के राजघरानों का बहुत विस्तार हुआ। राजपूतों में मेवाड़ के महाराणा प्रताप और पृथ्वीराज चौहान का नाम सबसे ऊँचा है। इन क्षत्रिय वंशों की उत्पत्ति के विषय में विद्वानों के दो मत प्रचलित हैं—एक का मानना है कि क्षत्रियों की उत्पत्ति विदेशी है, जबकि दूसरे का मानना है कि, क्षत्रियों की उत्पत्ति भारतीय है।

12वीं शताब्दी के बाद के उत्तर भारत के इतिहास को टोडने 'राजपूत काल' भी कहा है। कुछ इतिहासकारों ने प्राचीनकाल एवं मध्यकाल को 'संधिकाल' भी कहा है। इस काल के महत्वपूर्ण राजपूत वंशों में राष्ट्रकूट वंश, दहियावन्श, चालुक्यवंश, चौहानवंश, चंदेलवंश, परमारवंश एवं गहड़वालवंश आदि आते हैं।

विदेशी उत्पत्ति के समर्थकों में महत्वपूर्ण स्थान 'कर्नलजेम्सटॉड' का है। वे क्षत्रियों को विदेशी सीथियन जाति की सन्तान मानते हैं। तर्क के समर्थन में टॉडने दोनों जातियों की सामाजिक एवं धार्मिक स्थिति की समानता की बात कही है। उनके अनुसार दोनों में रहन-सहन, वेश-भूषा की समानता, मांसाहार का प्रचलन, रथ के द्वारा युद्ध को संचालित करना, याज्ञिक अनुष्ठानों का प्रचलन, अस्त्र-शस्त्र की पूजा का प्रचलन आदि से यह प्रतीत होता है कि क्षत्रिय सीथियन के ही वंशज थे।

विलियम क्रुक ने 'कर्नलजेम्सटॉड' के मत का समर्थन किया है। 'वी.ए. स्मिथ' के अनुसार शक तथा कुषाण जैसी विदेशी जातियाँ भारत आकर यहां के समाज में पूर्णतः घुल-मिल गयीं। इन देशी एवं विदेशी जातियों के मिश्रण से ही क्षत्रिय की उत्पत्ति हुई। भारतीय इतिहासकारों में 'ईश्वरीप्रसाद' एवं 'डी.आर. भंडारकर' ने भारतीय समाज में विदेशी मूल के लोगों के सम्मिलित होने को ही क्षत्रिय की उत्पत्ति का कारण माना है। भण्डारकर, कनिंघम आदि ने इन्हे विदेशी बताया है। इन तमाम विद्वानों के तर्कों के आधार पर निष्कर्षतः यह कहा जा सकता है कि, यद्यपि राजपूत क्षत्रियों के वंशज थे, फिर भी उनमें विदेशी रक्त का मिश्रण अवश्य था। अतः वे न तो पूर्णतः विदेशी थे, न तो पूर्णतः भारतीय।

क्षत्रियों का योगदान

क्षत्रियों की छतरछायों में, क्षत्राणियों का भी नाम है।

और क्षत्रियों की छायाँ में ही ,पुरा हिंदुस्तान है।



क्षत्रिय ही सत्यवादी है, और क्षत्रिय हीराम है।  
 दुनियाँ के लिए क्षत्रिय ही, हंदुस्तान में घनश्याम है।  
 हर प्राणी के लिए रहा, शिवा का कैसा बलिदान है।  
 सुना नहीं क्या, हिंदुस्तान जानता, और सभी नौजवान है।  
 रज शिव ने राजपूतों पर किया अहसान है।  
 मांस पक्षीके लिए दिया, क्षत्रियों ने भी दान है।  
 राणा ने जान दे दी पर हित, हर राजपूतों की शान है।  
 प्रथ्वी की जान ले ली धोखे से, यह क्षत्रियों का अपमान है।  
 अंग्रेजों ने हमारे साथ, किया कितना घृणित काम है।  
 लक्ष्मी सी माता को ले ली, और ले ली हमारी जान है।  
 हिन्दुओं की लाज रखने, हमने दे दी अपनी जान है।  
 धन्य—धन्य सबने कही पर, आज कहीं न हमारा नाम है।  
 भडुओं की फिल्मों में देखो, राजपूतों का नाम कितना बदनाम है।  
 माँ है उनकी वैश्या और वो करते हीरो का कम है।  
 हिंदुस्तान की फिल्मों में, क्यों राजपूत ही बदनाम है।  
 ब्रह्मण वैश्य शुद्र तीनों ने, किया कहीं उपकार का काम है।  
 यदि किया कभी कुछ है तो, उसमें राजपूतों का पुरा योगदान है।  
 अमर सिंघ राठौर, महाराणाप्रताप, और राव शेखा यह क्षत्रियों के नाम है।

क्षत्रियों का इतिहास अत्यंत गौरवशाली रहा है। हिंदू धर्म के अनुसार क्षत्रियों का काम शासन चलाना होता है। कुछ क्षत्रिय वंश अपने को भगवान श्री राम के वंशज बताते हैं। राजस्थान का अधिकांश भाग ब्रिटिश काल में राजपुताना के नाम से जाना जाता था। हमारे देश का इतिहास आदि काल से गौरवमय रहा है, क्षत्रियों की आन, बान, शान की रक्षा के बलवीर पुरुषों ने ही नहीं की बल्कि हमारे देश की वीरांगनायें भी किसी से पीछे नहीं रहीं। आज से लगभग एक हजार साल पुरानी बात है, गुजरात में जय सिंह सिद्ध राज नामक राजा राज्य करता था, जो सोलंकी राजा था, उसकी राजधानी पाटन थी, सोलंकी राजाओं ने लगभग तीन सौ साल गुजरात में शासन किया, सोलंकियों का यह युग गुजरात राज्य का स्वर्ण युग कहलाया। दुःख की यह बात है, कि सिद्धराज अपुत्र था, वह अपने चचेरे भाई के नाती को बहुत प्यार करता था। लेकिन एक जैन मुनि हेमचन्द्र ने यह भविष्यवाणी की थी, कि राजा सिद्धराज जय सिंह के बाद यह नाती कुमार पाल इस राज्य का शासक बनेगा। जब यह बात राजा सिद्धराज जय सिंह को पता लगी तो वह कुमार पाल से घृणा करने लगा और उसे मरवाने की विभिन्न युक्तियां प्रयोग में लाने लगा। परन्तु कुमार पाल सोलंकी बनावटी भेष में अपनी जीवन रक्षाके लिये घूमता रहा और अन्त में जैन मुनि की बात सत्य हुयी। कुमार पाल सोलंकी पचपन वर्ष की अवस्था में पाटन की गद्दी पर आसीन हुआ। राजा कुमार पाल बहुत शक्तिशाली निकला, उसने अच्छे—अच्छे राजाओं को धूल चटा दी, अपने बहनोई अणों राज चौहान की भी जीभ काटने का आदेश देदिया। लेकिन उसके गुरु ने उसकी रक्षा की। कुमार पालक जैन

धर्म का पाल कथा, और अपने द्वारा मुनियों की रक्षा करता था। वह सोमनाथ का पुजारी भी था। राज्य के गुरु हेमचन्द्र थे, और महामन्त्री उदय मेहता थे, यह मानने वाली बात है कि जिस राज्य के गुरु जैन और मन्त्री जैन हों, वहाँ का जैन समुदाय सबसे अधिक फायदा लेने वाला ही होगा। राजा कुमार पाल तेजस्वी ढीठ वदूरदर्शी राजा था, उसने अपने प्राप्त राज्य को क्षीण नहीं होने दिया, राजा ने मेवाड चित्तौण को भी लूटा था, 65 साल की उम्र में राजा कुमार पाल ने चित्तौड़ के राजा सिसौदिया से शादी के लिये लडकी मांगी थी, और सिसौदिया राजा ने अपनी कमजोरी के कारण लडकी देना मान भी लिया था। राजा ने यह भी शर्त मनवा ली थी कि वह खुद शादी करने नहीं जायेगा, बल्कि उसकी फेंटा और कटारी ही शादी करने जायेगी। मेवाड के राजाओं ने भी यह बात मान ली थी। एक भांड फेंटा और कटारी लेकर चित्तौड़ पहुंचा, राजकुमार सिसौदिनी से शादी होनी थी। राजकुमारी ने भी अपनी शर्त शादी के समय की, कि वह शादी तो करेगी, लेकिन राजमहल में जाने से पहले जैन मुनि की चरणवंदना नहीं करेगी। उसने कहा कि वह एकलिंग जी को अपना इष्ट मानती है। उसके मां-बाप ने यह हठ करने से मना किया लेकिन वह राजकुमारी नहीं मानी। रानी ने कुमार पाल की कटारी और फेंटा के साथ शादी की और उस भाट के साथ पाटन के लिये चल दी। मन्जिलें तय होती गयीं और रानी सिसौदिनी की सुहाग की पूरक फेंटा कटारी भी साथ-साथ चलती गयी। सुबह से शाम हुयी और शाम से सुबह हुयी। इसी तरह से तीन सौ मील का सफर तय हुआ और रानीपाटन के किले के सामने पहुंच गयी। राजा कुमार पाल के पास सन्देश गया कि उसकी शादी होकर आयी है और रानी राजमहल के दरवाजे पर है, उसका इन्तजार कर रही है। राजा कुमार पाल ने आदेश दिया कि रानी को पहले जैन मुनि की चरण वंदना को ले जाया जाये, यह सन्देशा रानी सिसौदिनी के पास भी पहुंचा, रानी ने भाट को जो रानी की शादी के लिये फेंटा-कटारी लेकर गया था, से सन्देशा राजा कुमार पाल को पहुंचाया कि वह एकलिंग जी की सेवा करती है और उन्ही को अपना इष्ट मानती है एक इष्ट के मानते हुये वह किसी प्रकार से भी अन्य धर्म के इष्ट को नहीं मान सकती है। यही शर्त उसने सबसे पहले भाट से भी रखी थी। राजा कुमार पाल ने भाट को यह कहते हुये नकार दिया कि राजा के आदेश के आगे भाट की क्या बिसात है, रानी को जैन मुनि के पास चरणवंदना के लिये जाना ही पडेगा। रानी के पास आदेश आया और वह अपने वचन के अनुसार कहने लगी कि उसे फांसी दे दी जावे, उसका सिर काट लिया जाये उसे जहर दे दिया जाये, लेकिन वह जैन मुनि के पास चरण वंदना के लिये नहीं जायेगी। भाट ने भी रानी का साथ दिया और रानी का वचन राजा कुमार पाल के छोटे भाई अजय पाल को बताया, राजा अजय पाल ने रानी की सहायता के लिये एक सौ सैनिकों की टुकडी लेकर और अपने बेटे को रानी को चित्तौड़ तक पहुंचाने के लिये भेजा। राजा कुमार पाल को पता लगा तो उसने अपनी फौज को रानी को वापस करने के लिये और गद्दारों को मारने के लिये भेजा, राजा अजय पाल की टुकडी को और उसके बेटे सहित रानी को कुमार पाल की फौज ने थोडी ही दूर पर घेर लिया, रानी ने देखा कि अजय पाल की वह छोटी सी टुकडी और उसका पुत्र राजा कुमार पाल की सेना से मारा जायेगा, वह जाकर दोनो सेनाओं के बीच में खडी हो गयी और कहा कि उसके इष्ट के आगे कोई खून-खराबा नहीं करे, वह एकलिंग जी को मानती है और उसे कोई उनकी आराधना करने से मना नहीं कर सकता है, अगर दोनो सेनायें उसके इष्ट के लिये खून-खराबा करेंगी तो वह अपनी जानदे देगी, राजा

कुमार पाल और राजा अजय पाल का पुत्र यह सब देख रहा था, रानी सिसौदिनी ने अपनी तलवार को अपनी म्यान से निकाला और चूमा तथा अपने कंठ पर घुमा ली, रानी का सिर वही जमीन पर गिर पडा। कुमार पाल और अजय पाल की सेना देखती रहगयी, रानी का शव पाटन लाया गया। रानी के शव को चन्दन की चिता पर लिटाया गया, और उसी भाट ने जो रानी को फंटा-कटारी लेकर शादी करने गया था ने रानी की चिता को अग्नि दी। अग्नि देकर वह भाट जय एकलिंग कहते हुये उसी चिता में कूद गया, उसके कूदने के साथ दो सौ भाट जय एकलिंग कहते हुये चिता में कूद गये, और अपनी अपनी आहुति आन, बान और शान के लिये दे दी। आज भी गुजरात में राजा कुमार पाल सोलंकी का नाम घृणा और नफरत से लिया जाता है तथा रानी सिसौदिनी का किस्सा बडी ही आन, बान शान से लिया जाता है। हर साल रानी सिसौदिनी के नाम से मेला भरता है, और अपनी पारिवारिक मर्यादा की रक्षा के लिये आज भी वहां पर भाट और क्षत्रियों का समागम होता है। यह आन, बान, शान की कहानी भी अपने मे एक है लेकिन समय के झकोरों ने इसे पता नही कहां विलुप्त कर दिया है।

उत्तर वैदिक काल में क्षत्रिय वर्ग ने देश और समाज में अपनी श्रेष्ठता स्थापित करने का प्रयास किया और उनके लिए यह कहा गया की क्षत्रिय से सर्वोच्च कोई नहीं। राजसुय यज्ञ में ब्राह्मण नीचे बैठकर क्षत्रिय की उपासना करता था। इतना ही नहीं ब्रह्मण क्षत्रिय की यौनि माना गया। (ऋग्वेद 1.73.7 2.3.5 9.97.15 9.107.4.9.105.4 10.124.7) उस काल में ब्रह्माण और क्षत्रियों की स्पद्धा काफी बढ़ गयी। उन्होने ब्राह्मण की बौद्धिक चुनौती को स्वीकार किया तथा अनेक ऐसे क्षत्रिय शासक हुए जिन्होने अपनी विद्वता, दार्शनिकता और सुविशता से अनेक ब्राह्मणों को अपना शिष्य बना लिया। जनक, अश्वपति, कैकय, काशिराज, कृष्ण, जरासंध अजातशत्रु प्रवहण, जैबलि अशोक तथा पाल ऐसे क्षत्रिय राजा थे जिन्होनें तत्कालिन युग में अपनी अनुपम विद्वता और आध्यात्मिकता से ब्राह्मण वर्ग को भी चकित कर दिया। पंचाग्नि विद्या का उद्भव और उन्नयन क्षत्रियों के कारण ही संभव हुआ। यह विद्या ब्राह्मण के पास नहीं गई थी। इसी विद्या के द्वारा सम्पूर्ण लोकों में क्षत्रिय का अनुश्रण होने लगा। (धूर्य महोदय के अनुसार)।

भगवान बुद्ध और महावीर क्षत्रिय वर्ण के महान धार्मिक और सामाजिक पुरोधे हुए जिन्होनें ब्राह्मण की जन्मना श्रेष्ठता की परम्परा पर चोट किया और भारतीय समाज के लिए कर्मवाद एवं समतावाद जैसे सिद्धांतों का आर्दश प्रस्तुत किया।

बुद्ध काल में क्षत्रियों की स्थिती सर्वोच्च हो गई थी। इस काल में जन्मना क्षत्रिय की प्रशंसा भी की गयी हैं। सोनक जातक में यह वर्णित है कि राजा अरनिक्ष्म ने अपनी जन्मनाश्रेष्ठता घोषित करते हुए कहा हैं की पुरोहित पुत्र सोनक ब्राह्मण ही जन्मा था और मैं पवित्र क्षत्रिय वंश में उत्पन्न श्रेष्ठ व्यक्ति हूँ। राज्य का शासन करने और शत्रुओं से प्रजा की रक्षा करने के कारण समाज और देश में क्षत्रियों का स्थान सर्वोपरि था। ब्राह्मण द्वारा ज्ञान और शिक्षा के क्षेत्र में स्थापित की, जाने वाली श्रेष्ठता को उसने कभी स्वीकार नहीं किया। उत्तरवैदिक युग में वह वेदों और वेदांतों का ज्ञाता बनकर, अनेक ब्राह्मणों को शिक्षा देकर अपनी विशिष्टता प्रदर्शित कर चुका था तथा ब्राह्मणों को अपनी श्रेष्ठता स्वीकार करने के लिए उसने बाध्य कर दिया था। पुनः बौद्ध काल में भी उसने ज्ञान और दर्शन के क्षेत्र में क्रांतिकारी परिवर्तन किया। फलतः नवीन विचारधारा का सृजन और विकास हुआ।

इस प्रकार बुद्धकाल के बाद भी क्षत्रियों की श्रेष्ठता बनी रही और यह वर्ग अपनी प्रतिभा एवं कुशलता के कारण समाज और देश में अपना महत्व बनाए रखा।

कलांतर में बौद्ध धर्म के उपर प्रहार होता रहा तथा पुनः बैदिक कर्मकाण्ड को प्रतिस्थापित कर दिया, इस क्रम में राजपुत्रों ने भी बौद्ध धर्म को खत्म करने में सहयोग दिया।

क्षत्रियों का गौरववशाली इतिहास अद्वितीय रहा है और इसके साक्ष्य भरे परे हैं। लेकिन कलांतर में कुछ क्षत्रिय जातियाँ शूद्र, अछुत कैसे हो गयी और इतिहासकारों ने इनके राजवंशों के इतिहास का हासिये पर रखा साथ ही हेय और नीच वर्ण करार दिया। भला इसकी वजह क्या हो सकती ? यह शोध का विषय है।

क्षत्रियों का जातीय गुण था शासन और सैन्य संचालन। अपने राजकीय अधिकारों, प्रशासनिक कार्यों और सामरिक कार्य-कलापों के कारण वे एक दूसरे वर्ग से पूर्णतः अलग थे। (महाभारत के शांतिपर्व में इसके साक्ष्य उपलब्ध हैं।) उनका प्रमुख कार्य था चातुसवर्ण को संरक्षण प्रदान करना तथा राज्य और देश में सुरक्षा व्यवस्था की दृष्टि से वे साधुओं का रक्षण तथा असाधुओं का दमन करते थे (महाभारत में साक्ष्य उपलब्ध) ब्राह्मणों की तरह क्षत्रियों को अध्ययन-अध्यापन करने का अधिकार तो प्राप्त था, (महाभारत 5.40.26.12.60. 13-20) किन्तु यज्ञ कराने का अधिकार नहीं था। इस प्रकार क्षत्रियों ने अपने राज्य की सुरक्षा, के साथ ही धर्म और दर्शन के क्षेत्र में भी अपना अमूल्य योगदान देते रहे हैं। भला ऐसे शानदार इतिहास वाले प्राचीन क्षत्रिय आज सूद्र और पिछड़ा कैसे हो गये और बाहरीअक्रंता इस देश के नियन्ता कैसे हो गये ? इस तरह के अनगिनत साक्ष्य भरे परे हैं, आवश्यकता है कि इस शोध के माध्यम से सच को सामने लाना क्योंकि डा० राम मोहन लोहिया ने कहा है कि किसी समुदाय की अतित को भूला दो तो उस समुदाय का दोहण और शोषण चलता रहेगा, इसलिए इस विषय पर शोध की आवश्यकता है। जिससे प्राचीन क्षत्रिय जातियों के गौरवशाली अतित की जानकारी मिल सके तथा इतिहास में नवीन अध्याय जुड़े।

### संदर्भ ग्रंथ

- |                        |   |   |
|------------------------|---|---|
| 1. जेली, संपादक        | — | विषणु धर्मसूत्र                                   |
| 2. बलदेव उपाध्याय      | — | अग्निपुराण, चौरवम्बा संस्कृत सीरीज ऑफिस, वाराणसी। |
| 3. उमेश चन्द्र पाण्डेय | — | याज्ञवल्क्य स्मृति।                               |
| 4. जयदेव शर्मा         | — | ऋग्वेद, आर्य साहित्य मंडल लि० अजमेर               |
| 5. जयदेव शर्मा         | — | अथर्ववेद  |
| 6. श्रीराम शर्मा भाष्य | — | हरीवंश पुराण                                      |
| 7. कठोपनिषद            | — | गीता, प्रेस, गोरखपुर                              |
| 8. महाभारत             | — | गीता, प्रेस, गोरखपुर                              |
| 9. भागवत पुराण         | — | गीता, प्रेस, गोरखपुर                              |
| 10. केनोपनिषद          | — | गीता, प्रेस, गोरखपुर                              |

# बिहार में कोसी जल संसाधन से सामाजिक आर्थिक क्रांति का अवलोकन

मुख्तार पासवान (कवि)\*

## भूमिका

स्वातन्त्रोत्तर काल से कोशी क्षेत्र के जन-जीवन संरचनात्मक विकास, आर्थिक विकास, आर्थिक क्रांति सामाजिक धरातल पर जल प्रलय एवं सुखाड़ का पर्याय बन चुका है। बिहार के कोशी प्रमण्डल सदा जल पलावन की समस्याएँ एवं सुखाड़ प्रवण की समस्याएँ विकास की एक कैंची को दो भाग तेज धार के समान है। विडम्बना यह है कि भारत सरकार, राज्य सरकार अरबों करोड़ों रूपया सही मार्ग दर्शन के अभाव में चाँद, मंगल अंतरिक्ष शोध अनुसंधान संरचनात्मक निर्माण कार्य में फिजुल खर्च कर रहे हैं। धरातलीय स्तर पर सतत आर्थिक विकास आर्थिक क्रांति का श्री गणेश पर्याप्त जल संसाधन का भण्डार कोशी क्षेत्र में प्राकृति के द्वारा प्रदत्त है। कोशी नदी प्राकृतिक की बहुमूल्य अमृत जल धारा, स्वच्छ पेयजल जिस जल के लिए राज्य, देश एवं विदेश में त्राहिमाम बूंद-बूंद के लिए किल्लत हो रही है। वही जल कोशी वासी का जीवन संहारक एवं विनाशक का कारण बना हुआ है। इस कोशी जल धारा पर महासेतु बनाने की कोई आवश्यकता, उपयोगिता नहीं रहने के कारण भी महासेतु जगह-जगह बनाया जाता है। एक ओर जल प्रलय दूसरी ओर कृषि कार्य के लिए डीजल अनुदान पम्पसेट, मशीन, वासवोटिंग, इलेक्ट्रीक बिजली पनबिजली सतही जल का अपयोग किया जाता है। जिसमें लागत पूंजी उत्पादन कार्य में अधिक लग रहा है। सतही जल का अभाव हो रहा है। धरातल पर प्राकृतिक प्रतिकूल असर पर रहा है। किसान गला धोटकर मृत्यु के लिए प्रार्थना कर रहा है। जब मैं कोशी धरातलीय क्षेत्र, अनुसंधान, निरीक्षण, अवलोकन साक्षात्कार परामर्श विचारोक्ति के संदर्भ में परिभ्रमण से ज्ञात हुआ कि कोशी प्रमण्डल के सहरसा सुपौल एवं मधेपुरा जिला एक समरूपता समतल भूमि नहीं है। कही बालू का टीला कही जल मग्न भूमि, कही कोशी के शीपेज भूमि उभर खाभड़ भूमि इस भू-भाग की भांगड़ मिट्टी, बालूआही मिट्टी चिकनी मिट्टी, दोमट ऊसर, बंजर, झाड़ी भूमि इत्यादि।

कोशी की जल वायु समशीतोष्ण, प्रदेश हैं कोशी के द्वारा लाया गया मिट्टी बहुत उपयोगी है। अत्यधिक उत्पादन शील भूमि है। प्रत्येक वर्ष कोशी बाढ़ प्रलय, सुखाड़ प्रवण के कारण यहाँ के आर्थिक विकास का अभाव है। जिसका मुख्यालय वीरपुर है। यह पुराना परियोजना है, भारत सरकार इस परियोजना को मृत्यु प्रायः बनाकर के रखा है। कर्मचारी एवं लोक सेवक जल निरीक्षण पदाधिकारी देख रेख करने वाले एवं जल सिंचाई का वसूली करने वाले कर्मचारी का आज तक सेवा नियुक्ति नहीं की गई है। नहर पुरानी परमपरागत रहने के कारण सरकारी चौकीदार के देखरेख के अभाव में पानी टूटने पर किसानों की हजारों एकड़ में लगी फसल बर्बाद हो जाती है। रब्बी के फसल में नहर परियोजना में पानी के अभाव में किसान बैक से ऋण लेकर सतही जल से सिंचाई करता है। अमृत रूपी कोशी जल संसाधन हिमालय के कन्दराओं से सात धारों की तीव्र गति से कोशी प्रमण्डल के सुपौल, सहरसा, मधेपुरा होते हुए पानी बंगाल की खाड़ी में प्रवाहित हो जाती है।

\*शोधवृत्ति शिक्षक स्नातकोत्तर अर्थशास्त्र विभाग बी०एन०एम०यू०, मधेपुरा।

कोशी जल संसाधन की वैज्ञानिक ढंग से कोशी प्रमण्डल में जल अनुसंधान केन्द्र की स्थापना की जाय, तो यह अमृत रूपी जल बुंद-बुंद कृषि उत्पादन, फलोत्पादन मखाना की खेती, मछली उत्पादन गन्ना उत्पादन पशुपालन, दुध उत्पादन, औषधीय पौधो का उत्पादन एवं विविध उत्पादन के संदर्भ में आर्थिक विकास ही नही आर्थिक क्रांति: कोशी प्रमण्डल में होगी। आर्थिक कांति से अपार रोजगार की सम्भावनाए बढ जाएंगी। कोशी वासी का आर्थिक कल्याण, आर्थिक विकास सम्भव हो जाएंगा। जल शोध अनुसंधान संस्थान स्थापित होने पर जल जलमग्न भूमि ऊसर, बंजर भूमि, जल प्रबन्धन, जल निष्कासन का समुचित विकास होगी। नेपाल सरकार के सहयोग से दो पहाड़ियों के मध्य बहने वाली कोशी जल धारा में प्रबन्धन कर बहुउद्देशीय नदी धारा, सिंचाई परियोजना, नदी का जीर्णोद्धार, नल के द्वारा प्रत्येक भूमि खण्ड में जल का प्रबन्धन, सिंचाई वैज्ञानिक विधि से सम्पन्न की जाएंगी। जिससे कृषि क्षेत्र में हरित क्रांति, नीली क्रोति, स्वेत क्रांति, लाल क्रांति, पीली क्रांति रंजत क्रांति, एवं विविध क्रांतियों का श्री गणेश होगा।

जल प्राकृतिक बहुमूल्य उपहार है, कोशी विश्व में शोक की नदी कहलाती है, यह कल्याण की नदी कहलाएगी कोशी जल संसाधन को प्रबन्धन करने पर नेपाल समेत बिहार में सभी अंसिचित भूमि को नल के जल बनाकरके प्रत्येक भूमि क्षेत्र में वितरण करने पर हमें महासेतु बनाने के लिए कोई आवश्यकता नही होगी। और सतही जल की आपूर्ति बढ जाऐगी। जगह, जगह पोखर में मखाना उत्पादन के साथ मछली उत्पादन, शीप उत्पादन विविध उत्पादन जल संचय से सम्भव है। कोसी बाढ़ के समय सभी नल के द्वारा जल जमाव क्षेत्र का पानी का निष्कासन होगी सूखे में प्रबन्धन से सिंचाई होगी। जल अनुसंधान केन्द्र कोशी प्रमण्डल में होने से आर्थिक क्रांति का स्वरूप परिलक्षित हो रहा है। सिर्फ सब्जी की उत्पादन से भारत के सभी राज्यों में सब्जी की सालों भर पूर्ति किया जा सकता है। केला के उत्पादन बढने से सभी राज्यों में फल की आपूर्ति की जा सकती है। गन्ना की उत्पादन बढने से राज्य के सभी गाँव में गुड़ की आपूर्ति की जा सकती है। बाँस एवं झाड़ीनुमा पौधा से व्यापारी निर्यात में वृद्धि की जा सकती है। मलवरी के खेती से रेशमी वस्त्र की उत्पान में काफी वृद्धि की जा सकती है।

कोशी प्रमण्डल के क्षेत्रीय ग्रामीण निवासी जीवन-सामाजिक सुरक्षा, शांति, जीवन निर्वाह के लिए सरकारी गैर सरकारी व्यवस्था का आकलन 400 सौ प्रश्नावली के साक्षात्कार स्थानीय ग्रामीणों बुजुगों बुद्धिजीवी से लिया गया, है तो पता चला कि कोशी वासी 21 वीं सदी में जहाँ शोध अनुसंधान के द्वारा चाँद, मंगल ग्रह पर पानी की खोज अभियान में करोड़ों अरबों रूपया खर्च की जा रही है। वही साक्षात्कार परिभ्रमण, पत्र, पत्रिका दैनिक समाचार के प्रकाशन अवलोकन से कोशी ग्रामीण वासी जीवन 16 वी शताब्दी में जी रहे है। यह दुर्भाग्य की बात है कि यहाँ के दुर्गम गाँवों की स्थिति बाढ़ से तवाह हो कर पुराने परमप्रागत जीवन जी रहे है। जीविका पालन के लिए 70 प्रतिशत से 80 प्रतिशत जनसंख्या किसान, मजदूर बाहर में देहारी मजदूरी करते है। कोशी क्षेत्र के निवासी का जीवनस्तर दैनिक समाचार पत्र में प्रकाशित चित्रांकन के अवलोकन से ज्ञात होता है कि कोशी वासी के दलित समुदाय का जीवन समस्याएँ से जूझ रहा है। उसका जीवन स्तर कैसा होगा। जहाँ खड़ा होने के लिए सुखा भूमि न हो, देह पर वस्त्र न हो, खाने-पीने के लिए अन्न न हो, सबका सब पानी में डुब गया हो, रात की अंधेरी काली कोठरी हो, साँप बिच्छू, विषेले जानवर का तांडव हो, शिक्षा, स्वास्थ्य का संरचनात्मकता का अभाव हो, स्थायी बसने का अपना भूमि न हो, जमीनदारों के द्वारा

शोषित प्रताड़ित हो, गुलाम एवं वेगार बन्धुआ मजदूर हो, गरीबों की भूमि पर जमीन्दारों का अत्याचार हो, कोई उसे न्याय सुनने वाला न हो, बुद्धि जीवियों के द्वारा प्रताड़ित हो, उसे क्या कहेंगे। 16 वीं शताब्दी की गुलाम नही तो 21वीं सदी का आजाद भारत शोभा नही देता है। जिसके लिए सभी दिशाएँ अन्धकारमय हो, जल संसाधन की दुख का कारण बना हुआ है। जल संसाधन को भूमिगत बड़ा-बड़ा केनाल बनाकर के नाला निकाल करके प्रत्येक भू खण्ड में जल का निष्काषण किया जाय, तो यह कल्याणकारी होगी जो परियोजना विवरणी के द्वारा दर्शाया गया है।

(1) जल चक्र आरोही क्रम के द्वारा दर्शाया गया है।

सागर- वाष्पीकरण- बादल- वर्षा

(2) जल प्रदूषण के दुःप्रभाव

(क) जल की पारदर्शिता में कमी आना।

(ख) जल में दुर्गन्ध आना स्वाद अरुचिकर होना

(ग) जल का भारी हो जाना।

(घ) रंगाई छपाई के उपयोग में लेने के बाद छोड़े गये जल से हजारों एकड़ भूमि का बंजर हो जाना।

### मनुष्य पर प्रभाव

सामान्य मापदण्ड के अनुरूप मनुष्य को लगभग 135 लीटर जल की आवश्यकता होती है। दैनिक उपयोग के अतिरिक्त सिंचाई, उधोग, परिवहन, पर्यटन आदि में जल का उपयोग किया जाता है। प्रदूषित जल में सूक्ष्म जीवानुओं का तीव्रता से विकास होता है जो मानव स्वास्थ्य के लिए हानिकारक होते हैं। प्राकृतिक जल जब मनुष्य पीने के माध्यम से ग्रहण करता है तो उसमें उपस्थित जीवाणुओं से अनेक प्रकार की बीमारीयों जैसे हैजा, टायफाइड, डायरिया, पेचिस आदि फैल जाते हैं, जो कभी-कभी महामारी का रूप भी ले लेता है। पीलीया यकृत शोध पोलियों आदि बिमारीयो भी प्रदूषित जल से होती है। पेट की आतों की बिमारी जैसे-अतिसार, यकृत एण्डिस, मास के जीवाणु भी जल से ही होते हैं। जल में फ्लोराईड की मात्रा से दोनों में विकृति आ जाती है। पैथ जल के साथ नाईट्रेट शरीर में पहुँचकर नाईट्रस में बदल जाते हैं, जिससे रक्त की ऑक्सीजन वहन क्षमता कम हो जाती है।

### जल जीवों जलीय वनस्पति पर प्रभाव

जलीय जीव वनस्पति जल प्रदूषण से सर्वाधिक प्रभावित होती है क्योंकि ये जल के शीघे सर्म्पक में होते हैं। जल में किसी भी तरह का प्रदूषण उसके जीवन को हानि पहुँचाते हैं तथा उसका विनाश हो जाता है।

प्रदूषित जल में मछलियों आक्सीजन की कमी से मरने लगते हैं तेल फैलने से रेडियोधर्मी पदार्थ के जल जीवों में प्रवेश करने से वे समाप्त हो जाती हैं। उधोगों से होने वाले भारी स्त्राव से मछली व अन्य नदी जलीय या समुदीय जीव नष्ट होने लग गये हैं। कृषि में प्रयुक्त कीटनाशकों के जल में मिश्रित हो जाने से जल जीव विनष्ट हो जाते हैं। जल में नाईट्रेट व फास्फेट के मिश्रित हो जाने से शैवाल में वृद्धि होती है जिससे सूर्य का प्रकाश अन्दर तक नही पहुँच पाता है व व्यर्थ की वनस्पति का विकास हो जाता है और जलीय पौधे

समाप्त हो जाते हैं। अतः जल प्रदूषण एक विश्वव्यापी समस्या है जिसकी अगर अभी रोकथाम न की गई तो भविष्य में एक संकट खड़ा हो सकता है।

### जल प्रदूषण रोक थाम के उपाय

पेयजल स्रोतों में समय-समय पर पोटेशियम परमैंगनेट जैसी दवा डालकर सामान्य जीवाणुओं से मुक्त किया जा सकता है। सरकारी स्तर पर जल के प्रदूषण की नियमित जाँच होनी चाहिए उसका स्वास्थ्य एवं पर्यावरण पर पड़ने वाले प्रभाव का अध्ययन करना चाहिए। साथ ही इस कार्य पर समुचित निगरानी करके नियमों का उल्लंघन करने वाले को सख्त दण्ड दिया जाना चाहिए। स्थानीय निवासियों की प्रदूषण के खतरे वे रोकने के लिए उपायों का जानकारी दी जानी चाहिए, जिससे प्रारम्भिक अवस्था में इसे रोका जा सके। सरकारी के अतिरिक्त स्थानीय स्तर पर स्वयंसेवी संस्थाओं द्वारा इसमें सकारात्मक भूमिका निभाई जानी चाहिए। जल शुद्ध करने में उपयोगी जलीय जीवों को संरक्षित करना चाहिए। धरेलु वाह्य स्राव व वाहित मल को उपचालित करने के पश्चात ही किसी जल स्रोत में डाला जाना चाहिए। कृषि में कीट नाशकों का प्रयोग कम से कम करना चाहिए। डी0डी0टी0 व अन्य स्थाई कीटनाशकों पर रोक लगाना चाहिए। उपचारित गन्दे पानी का उपयोग सिंचाई के लिए किया जा सकता है। उधोगों पर वाहित प्रदूषित जल को स्रोतों में डालने पर रोक का कठोरता से पालन किया जाय या जल उपचार संयन्त्र के द्वारा जल उपचारित करके ही नदी में छोड़ा जाय। पेयजल स्रोतों के निकट गन्दगी एकत्रित न होने के लिए चारों ओर पक्की दिवार बनानी चाहिए। जल में उगे अनावश्यक शैवाल व अन्य पौधों की सफाई नियमित रूप से कही जानी चाहिए। केन्द्र सरकार ने जल प्रदूषण समस्या से निपटने के लिए 1974 में जल प्रदूषण नियंत्रण बोर्ड की स्थापना की तथा कई तथ्यों में भी इस तरह के मण्डन स्थापित करने के लिए राज्य सरकार को भी सुझाव दिया। पर्यावरण संरक्षण अधिनियम 1986 में जल प्रदूषण की नियंत्रित करने की पर्याप्त व्यवस्था है। 1981-90 के दशक को अन्तर्राष्ट्रीय पेयजल एवं सेनीटेशन दशक के रूप में मनाया गया है, जिसमें भारत की सम्मिलित था। इसका उद्देश्य स्वच्छ व सुरक्षित जल प्रदान करना था। वास्तव में जल प्रदूषण एवं ऐसी समस्या है जिसे सरकार और हम सब मिलकर ही नियंत्रित कर अपना भविष्य सनरक्षित बना सकता है।

### आर्थिक विकास एवं क्रांति

आर्थिक क्रांति को ही आर्थिक विकास के रूप में स्वीकार कर लेते हैं, परन्तु कतिपय अर्थशास्त्रीयों ने आर्थिक विकास और आर्थिक क्रांति को अलग ढंग से परिभाषित किया है। उनका मानना है कि आर्थिक विकास शब्द का प्रयोग अल्पविकसित देशों के लिए होता है, जबकि क्रांति का प्रयोग विकसित देशों के लिए किया जाता है। किडलबर्गर और हैरिक के अनुसार— आर्थिक विश्लेषण में कभी कभी 'क्रांति' और विकास को समानार्थी के रूप में प्रयुक्त की जाती है वहाँ विकास एवं क्रांति की अलग-अलग अर्थों में परिभाषित किया जाता है। दोनों शब्दों के अन्तर को स्पष्ट करते हुए उन्होंने लिखा कि आर्थिक क्रांति का मतलब अधिक उत्पादन है जबकि आर्थिक विकास का अर्थ है। अधिक उत्पादन तथा तकनीकी और स्थानिक व्यवस्थाओं में परिवर्तन जिनके द्वारा यह उत्पादित और वितरित होता है। आर्थिक क्रांति व विकास की परिभाषित करते हुए टिकस ने लिखा



है कि 'अल्पविकसित देशों की समस्याएँ उपयोग में न लाए गए साधनों के विकास से सम्बन्ध रखती है, भले ही उनके उपयोग भली भाँति ज्ञात हो, जबकि उन्नत देशों की समस्याएँ क्रांति से सम्बन्धित रहती है जिसके बहुत सारे साधन पहले से ज्ञात और किसी सीमा तक विकसित होते हैं। विकास की परिभाषा का परिशीलन करने पर हम निष्कर्ष पर पहुँचते हैं कि विकास शब्द का सम्बन्ध उन पिछड़े हुए देशों से है जहाँ पर साधनों का पूर्ण उपयोग नहीं हुआ और उनके उपयोग की अभी संभावना है। इसके विपरीत 'क्रांति' शब्द का प्रयोग आर्थिक दृष्टि कोण से विकसित देशों से शुम्पीटर ने इसे स्वतः प्रेरित परिवर्तन के रूप में स्वीकार किया तथा यह माना कि विकास व क्रांति का अर्थ व्यवस्था से किसी प्रकार का सरोकार नहीं है। इन दोनों शब्दों में अन्तर स्पष्ट करते हुए उन्होंने कहा कि विकास स्थिर व्यवस्था में एक निरंतर और स्वतः प्रेरित परिवर्तन है जो पहले से वर्तमान संतुलन व्यवस्था को हमेशा के लिए परिवर्तन और विस्थापित करता है, जबकि क्रांति दीर्घकाल में होने वाला क्रमिक तथा सतत् परिवर्तन है जो बचतों और जनसंख्या की दर में धीरे-धीरे वृद्धि द्वारा आना है। शुम्पीटर की यह परिभाषा अधिकतर अर्थशास्त्रियों द्वारा मान्य है।

आर्थिक विकास एवं क्रांति में अन्तर स्पष्ट करते हुए मेडिसन ने लिखा है कि 'आय स्तरों की ऊँचा करना सामान्यतया अमीर देशों में आर्थिक क्रांति कहलाती है जबकि गरीब देशों में यह आर्थिक विकास कहलाता है। आलोचनात्मक पक्ष यह है कि आर्थिक परिप्रेक्ष्य में विश्लेषण करते समय कभी-कभी अल्पविकसित के पर्याय के रूप में पिछड़े अथवा गरीब शब्द का भी प्रयोग किया जाता है। गरीब शब्द का प्रयोग प्रति व्यक्ति आय के नीचे स्तर से है। परन्तु मेडिसन की परिभाषा दोनों प्रकार की अर्थ व्यवस्थाओं में आय स्तरों को बढ़ाने वाली अन्तर्निहित शक्तियों को स्पष्ट करती है।

आर्थिक क्रांति का सम्बन्ध देश की प्रति व्यक्ति आय या उत्पादन में एक मात्रात्मक निरंतर वृद्धि से लिया जाता है जिसकी श्रम शक्ति, उपयोग, पूँजी और व्यापार की मात्रा में प्रसार के साथ होती है। दूसरी तरह आर्थिक विकास को विस्तृत धारण माना जा सकता है। यह आर्थिक आवश्यकताओं में प्रसार के साथ होती है। दूसरी तरफ आर्थिक विकास को विस्तृत धारणा माना जा सकता है। यह आर्थिक आवश्यकताओं वस्तुओं प्रेरणाओं और संस्थाओं में गुणात्मक परिवर्तनों से सम्बन्धित है। यह प्रौद्योगिकी और संरचनात्मक परिवर्तनों जैसे वृद्धि के अन्तर्निहित निर्धारकों का वर्णन करता है। विकास में और द्वारा दोनों सम्मिलित होते हैं। प्रौद्योगिकी और संरचनात्मक परिवर्तन के अभाव के कारण गरीबी, बेरोजगारी और असमानताएँ निरंतर पायी जाती हैं। परन्तु प्रति व्यक्ति उत्पादन में क्रांति के अभाव के कारण विशेषकर जब जनसंख्या में तीव्रता से बढ़ोतरी हो रही है तो ऐसी स्थिति में अर्थव्यवस्था तभी से सुदृढ़ हो सकती है जबकि जनसंख्याएँ संसाधनों से संतुष्ट हो।

### कोसी जल संसाधन से सामाजिक आर्थिक क्रांति का सुझाव

बिहार में कोशी जल संसाधन की भयावह समस्याएँ से निजात समाधान पाने के लिए, सरकारी गैर सरकार एवं ग्रामीणों की जागरूकता की अत्यन्त आवश्यक जरूरी है।

1. कोशी जल संसाधन कोशी वासी का जितना अभिशाप है, उतना स्वर्ग की उपवन जल क्षेत्र है। प्राकृतिक की सृष्टि में जल ही जीवन है, आवश्यकता से अधिक होने पर प्रलय है। जल की अनुपलब्धता पर भी जीना दूभर है।

2. जल संसाधन प्राकृतिक का धरोहर जीव जगत का सृजन एवं विनाशक भी है, जल मानव की आर्थिक क्रांति का पूंजी है।
3. जल की गरिमा और महिमा अपार शक्तिमान है; ऋषि मुनि एवं वेद शास्त्रों ग्रंथों में जल संसाधनों की महता का विशलषण शुद्धता के साथ आहत रूपी ज्ञान धारा, मोती, हीरे, की तुलना में अधिक जीवन दायी सृष्टि का सृजन माना है।
4. जल संसाधन की प्रबन्ध संरक्षण, एवं परियोजनाएँ के द्वारा समग्र क्रांतियों के द्वारा आर्थिक क्रांति रोजगार का सृजनकर्ता है।
5. जल संसाधन की सुरक्षा संरक्षण, प्रबन्धन, शुद्धता करना मानव का प्रथम कर्तव्य है। जल संसाधन प्रदूषित होने पर जीवन जगत सृष्टि ही विनष्ट हो जाएगी।
6. कोशी जल संसाधन मानवीय, पर्यावरणीय, जीव जगत का पोषक नियंत्रक, व्यवस्थाक के रूप में कार्यरत है।
7. स्वच्छ जल संसाधन से कृषि क्रांति, पशुपालन, पेयजल, पर्यावरण संतुलन, जंगल की सौंदर्यीकरण पहाड़ पठार की शोभायमान में चार चाँद लगाता है।
8. कोशी जल संसाधन हिमालय पर्वतमालाओं के सात हिम खण्डों से निकलकर हिमालय की गोद बराह क्षेत्र में संगम स्थल पर मिलते हैं।
9. संगम स्थल बराह क्षेत्र से 8 किलोमीटर दक्षिण दिशा में प्रवाहित होकर चतरा गार्ज नामक गाँव, सप्तरी जिला नेपाल में स्थल भू-भाग में उत्तरती है 72 किलोमीटर दूरी तय कर हनुमान नगर बराज भारत के सीमावर्ती जिला-सुपौल में प्रवेश करती है।
10. जल संसाधन प्राकृतिक का बहुमूल्य सम्पदा है, इसकी उपयोग करने की कला होना चाहिए।
11. भारत सरकार एवं नेपाल सरकार के संयुक्त सहमति से दोनों देश के कल्याणार्थ कृषि क्षेत्र में आर्थिक क्रांति समेत सभी क्रांति का श्री गणेश जल संसाधन से ही सम्भव है।
12. क्षेत्र परिभ्रमण एवं वैज्ञानिक शोध-अनुसंधान विधि के द्वारा अवलोकन तथ्यों साक्ष्यों के आधार पर काफी चिंतन शोध विचारोक्त के आधार पर चतरा गार्ज नेपाल के तराई क्षेत्रों में ऊँची हाई डेम बांध का निर्माण करना चाहिए।
13. हाई डेम निर्माण के पूर्व, दक्षिण, पश्चिम दिशाओं में पक्कीकरण मोटी दिवार और तलीय स्तर पर केनाल का निर्माण की जरूरत है। प्रथम दृष्टि तीन दिशाओं में चौरीकरण डेम की जरूरत है
14. पक्कीकरण केनाल से अलग-अलग दिशाओं में जमीन के अन्दर पक्कीकरण गाढ़ नाला निकाला जाय। प्रत्येक नाला में पानी अवरोध के साथ-साथ लोदा की पानी नली चौड़ी निकाला जाय। प्रत्येक नाली को इस तरह से क्षेत्रीय भू-भाग में पहुंचाया जाय ताकि प्रत्येक भूखण्ड को समय पर पानी मिल सके।
15. इस नाली के मुहाना गंगा नदी के मिलन बिन्दु कुरसेला में निसृत किया जाय। जल मग्न भूमि का पानी निष्कासित की जाएगी

16. इस नाली व्यवस्था से ऊँसर बंजर भूमि को नल के जल से सिंचाई की जाएगी। आर्थिक विकास नहीं आर्थिक क्रांति के साथ बेरोजगार किसानों का कल्याण होगा।
17. नहर परियोजनाएँ केनाल परियोजनाएँ, नल परियोजनाएँ सहायक नदी जीर्णोदार परियोजनाएँ, नल परियोजनाएँ बहुउद्देश्य परियोजनाएँ के संचालन से कोशी वासी नही बल्कि भारत के कई राज्यों में जल की किल्लत नही होगा।
18. सभी परियोजनाएँ को भारत सरकार से विशेष योजनाओं का बजट बनाकर बहुउद्देश्य योजनाएँ को संचालित किया जा सकता है।
19. बहुउद्देश्यी योजनाएँ के संचालित होने से हरित क्रांति, लघु कुटीर उधोग, पीली क्रांति, भूरी क्रांति, गन्ना उत्पाद क्रांति, लघु कुटीर उधोग क्रांति औषधीय क्रांति, लाल क्रांति, काली क्रांति, स्वेत क्रांति, रजत क्रांति, फलोदान क्रांतिके साथ-साथ प्राकृतिक वतावरण सौदर्यीकरण रोजगार का सृजन आर्थिक विकास से आर्थिक क्रांति विकसित होगी।
20. कोशी जल संसाधन में छिपी हुई बैरोजगारी, अदृश्य बैरोजगारी मौसमी बैरोजगारी, सेवा क्षेत्र, उत्पादन क्षेत्र व्यापारिक, यातायात आय संसाधन में काफी वृद्धि के साथ विकास में चार चाँद लगेगी।
21. जगह जगह पोखर, जलाशय, चौर, मृत्य प्राय गाढ़, नदी, में सालों भर पानी सिंचित रहेगों पशु पक्षी मानवीय कल्याण में शांति होगी। जन जीवन संतुलित रहेगा।
22. जल संसाधन नियंत्रित प्रबंधन होने से पुल पुलिया सेतु महासेतु बाँध का समस्याएँ खत्म हो जाएगी।
23. जलमग्न सीपेज भूमि उत्पादन शील हो जाएगी। नदी में बाढ़ प्रलय असर में सुखाड़ प्रवण की समस्याएँ खत्म हो जाएगी।
24. कृषि ऋण किसानों को पटवन हेतु सिंचाई पम्पसेट डीजल की खपत बंद हो जाएगी। नल के जल से खेती होगी।
25. बाढ़ प्रलय से धन, जन, जीवन पशु, की सुरक्षा व्यवस्था सरकारी योजनाएँ की घोटाला भ्रष्टाचार रिलीफ अनुदान बाढ़ राहत की समस्या एवं फसल क्षति की समस्याएँ खत्म होगी।
26. भू-स्खलन, गृह विहीन नदी की तेज धारा में विलीनता की स्थिति नही रहेगी।
27. शिक्षा, स्वास्थ्य, सांस्कृति, आर्थिक, सामाजिक उत्थान होगी।
28. अवागमन अवरोधक समस्याएँ खत्म होगी, गन्तव्य स्थानों से धण्टों में जिला मुख्यालय, राज्य-देश की सवारी मिल जाएगी।
29. कोशी तटबंध के भीतर सात दशकों से सिल्ट बालू की बिक्री होगी। किसान मजदूर को आय का स्रोत बढ़ेगा। बालूआई बंजर रेतीली भूमि उत्पादन शील होगी।
30. संरचनात्मक व्यवस्थाओं में वृद्धि होने से रोजगार के अवसर बढ़ेगे। रोजगार के नये-नये अवसर मिलेगे।
31. शिक्षा स्वास्थ्य, संस्कृतिक, कला, विज्ञान का अवसर मिलेगा।
32. कोशी दियारा क्षेत्र में आतंकियों, अत्याचारियों लटेरों का अन्त होगा।
33. जल प्रबंधन एवं परियोजनाओं के कार्यान्वयन से सरकारी आय में वृद्धि होगी। मुद्रा भंडार समय भर जाएगी। किसान को पटवन नल के जल से होगी।

34. मशीन पम्पसेट, टीजल अनुदान, ऋण, बोटिंग, बॉसबोरिंग, की समस्याएँ खत्म होगी।
35. भूमि जल, सतही जल का तलीय धटना बंद होगी। पानी का संचय करना वर्तमान समय में बहुत उपयोगी होगी।
36. वैज्ञानिक शोध अनुसंधान विधि का प्रारूप तैयार कर निर्माण कार्य का संचालन शीघ्र राज्य सरकार एवं केन्द्र सरकार को करना चाहिए।
37. जिला पदाधिकारी, बाढ़ आपदा, सिंचाई विभाग जल संसाधन विभाग, विधि आयोग, रोजगार मंत्रालय को सूचनार्थ क्रार्यार्थ, अनुपालनार्थ, शीघ्र विचारों गोष्ठियों के माध्यम से जल्द से जल्द संसद में बिल लाकर योजना को पास कराकर के शीघ्र कार्यवाई करने की अत्यन्त आवश्यक जरूरी है।

## निकर्ष

इस प्रकार उपर वर्णित तथ्यों पर अमलकर सरकार जब धरातल पर कार्य को मूर्त रूप देगी तभी समस्या का निदान संभव हो पाएगा। बिहार में कोसी जल संसाधन से सामाजिक आर्थिक क्रांति का युग आ सकेगा। कोसी की प्रलयकारी बाढ़ से लोग निजात पा सकेगा। इसके लिए भारत-नेपाल सरकार द्वारा पूर्व करार किए गए डैम निर्माण जब तक नहीं बनाया जाएगा तब तक सामाजिक आर्थिक क्रांति सिर्फ सपना बन कर रह जाएगा।

## संदर्भ सूची

- कोशी प्रमण्डल के धरातलीय परिभ्रमण साक्षात्कार परिदृश्य के अवलोकन से ज्ञात।
- जिला सुपौल पंचायत महेशपुर के ग्रामीण प्रबुद्धिजीवि राजेश कुमार पासवान एवं राम भगवान यादव एवं अन्य के विचार विमर्श साक्षात्कार से प्राप्त।
- कोशी जल संसाधन, कोशी सिंचाई परियोजनाओं की जाँच क्षेत्रीय सर्वेक्षात्मक तथ्य के आधार पर प्राप्त हुआ है।
- सत्यवीर सिंह पर्यावरण एवं सामाजिक क्षेत्र की अर्थव्यवस्था पृ0 सं0- 178
- सत्यवीर सिंह पर्यावरण एवं सामाजिक क्षेत्र का अर्थशास्त्र यूनिभसिटी पब्लिकेशन 224735 प्रकाशदीप विलिडिंग अंसारी रोड (दक्षिण) नई दिल्ली पृ0 सं0-61

# Physical Fitness and Yoga Practice Reduces Depression

Dr. Binaya Bhusan Mohapatra\*

## ABSTRACT

Depression is a common but serious mood disorder. It causes severe symptoms that affect how you feel, think, and handle daily activities. As depression is increasingly common in present days, especially in adolescents, various research studies have conducted on effectiveness of different strategies as cognitive behavioural therapy, physical exercise, meditation, yoga, aerobic exercises, medication etc. on reducing depression. In some of other cases, surveys are conducted on comparing the depression level of different socio-economic status, cultural background, gender (male/female), age group. This study was conducted for showing the effectiveness of physical exercises and yogic practices, whether these are significant in reducing the level of depression among adolescents and which is more effective. 200 college students are randomly selected and used as sample for this study, from which 100 are provided with physical exercise, and other 100 are with yogic practices for a session of 2 week period. After comparing the pre-session and post-session scores and values it was revealed that physical exercise is highly significant in reducing depression level with adolescents than yogic practice.

## INTRODUCTION

Depression is a state of sadness, feeling down, having loss of interest or pleasure in daily activities. These are symptoms familiar to all of us. but, if they persist and affect our life substantially, it may be depression. Depression is increasingly common in children.

Everyone experiences an occasional blue mood. Depression is a more pervasive experience of repetitive negative rumination, bleak outlook and lack of energy. It is not a sign of personal weakness or a condition that can be willed or wished away. People with depression can merely pull themselves together and get better.

They are also in grief, painful feelings come in waves, often intermixed with positive memories of the deceased. In major depression, and mood and interest are decreased for most of two weeks. Self-esteem is usually maintained. In major depression, feeling of worthlessness and self-loathing are common.

Even in the most severe cases, depression is highly treatable. The condition is often cyclical and early treatment may prevent or forestall recurrent episodes. Many studies show that the most effective treatment are cognitive behavioural therapy, physical exercises, meditation, yoga etc.

## PHYSICAL EXERCISE

Physical exercise means any bodily activity that enhance or maintains physical fitness and overall health and wellness. It is performed for various reasons including strengthening muscles,

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and the cardiovascular system, honing athletic skills, weight loss or maintenance, as well as for the purpose of enjoyment. Frequent and regular physical exercise boosts the immune system, and helps prevent the ‘disease of affluence’, such as heart diseases, cardiovascular disease, type 2 diabetes and obesity as well as also for depressive people.

## EFFECT OF YOGA ON DEPRESSION

- (a) **Stress Relief** - Yoga reduces the physical effects of stress on the body. By encouraging relaxation, yoga helps to lower the levels of the stress hormone cortisol. Related benefits include lowering blood pressure and heart rate, improving digestion and boosting the immune system as well as easing symptoms of conditions such as anxiety, depression, fatigue, asthma and insomnia.
- (b) **Pain Relief** - Yoga can ease pain. Studies have demonstrated that practicing yoga asanas (postures), meditation or a combination of the two reduces pain for people with conditions such as cancer, multiple sclerosis, auto-immune diseases and hypertension as well as arthritis, back and neck pain and other chronic conditions. Some practitioners report that even emotional pain can be eased through the practice of yoga.
- (c) **Better Breathing** - Yoga teaches people to take slower, deeper breaths. This helps to improve lung functioning, trigger the body's relaxation response and increase the amount of oxygen available to the body.
- (d) **Flexibility** - Yoga helps to improve flexibility and mobility, increasing range of movement and reducing aches and pains. Many people can't touch their toes during their first yoga class. Gradually they begin to use the correct muscles. Over time, the ligaments, tendons and muscles lengthen, increasing elasticity, making more poses possible. Yoga also helps to improve body alignment resulting in better posture and helping to relieve back, neck, joint and muscle problems.
- (e) **Increased Strength** - Yoga asana (postures) use every muscle in the body, helping to increase strength literally from head to toe. And, while these postures strengthen the body, they also provide an additional benefit of helping relieve muscular tension.
- (f) **Weight Management** - Yoga (even less vigorous styles) can aid weight control efforts by reducing the cortisol levels as well as by burning excess calories and reducing stress. Yoga also encourages healthy eating habits and provides a heightened sense of well-being and self-esteem.
- (g) **Improved Circulation** - Yoga helps to improve circulation and as a result of various poses. More efficiently moves oxygenated blood to the body's cells.
- (h) **Cardiovascular Conditioning**- Even gentle yoga practice can provide cardiovascular benefits by lowering resting heart rate, increasing endurance and improving oxygen uptake during exercise.
- (i) **Focus on the Present** - Yoga helps us to focus on the present, to become more aware and to help create mind/body health. It opens the way to improved concentration, coordination, reaction time and memory.
- (j) **Inner Peace** - The meditative aspects of yoga help many to reach a deeper, more spiritual and more satisfying place in their lives. Many who begin to practice for other reasons have reported this to be a key reason that yoga has become an essential part of their daily lives.

## EFFECT OF PHYSICAL EXERCISE ON DEPRESSION

Studies show that exercise can treat mild to moderate depression as effectively as antidepressant medication—but without the side-effects, of course. In addition to relieving depression symptoms, research also shows that maintaining an exercise schedule can prevent you from relapsing.

Exercise is a powerful depression fighter for several reasons. Most importantly, it promotes all kinds of changes in the brain, including neural growth, reduced inflammation, and new activity patterns that promote feelings of calm and well-being. It also releases endorphins, powerful chemicals in your brain that energize your spirits and make you feel good. Finally, exercise can also serve as a distraction, allowing you to find some quiet time to break out of the cycle of negative thoughts that feed depression.

- (a) Sharper memory and thinking- The same endorphins that make you feel better also help you concentrate and feel mentally sharp for tasks at hand. Exercise also stimulates the growth of new brain cells and helps prevent age-related decline.
- (b) Higher self-esteem- Regular activity is an investment in your mind, body, and soul. When it becomes habit, it can foster your sense of self-worth and make you feel strong and powerful. You'll feel better about your appearance and, by meeting even small exercise goals, you'll feel a sense of achievement.
- (c) Better sleep- Even short bursts of exercise in the morning or afternoon can help regulate your sleep patterns. If you prefer to exercise at night, relaxing exercises such as yoga or gentle stretching can help promote sleep.
- (d) More energy- Increasing your heart rate several times a week will give you more get-up-and-go. Start off with just a few minutes of exercise a day, and increase your workout as you feel more energized.
- (e) Stronger resilience- When faced with mental or emotional challenges in life, exercise can help you cope in a healthy way, instead of resorting to alcohol, drugs, or other negative behaviors that ultimately only make your symptoms worse. Regular exercise can also help boost your immune system and reduce the impact of stress.

## REVIEW OF LITERATURE

Different studies have differential opinion about the role of physical exercises on depression. P.C. Dinas, Y.Koutedakis, A.D. Flouris (2010) researched on "Effect of exercise and physical activity on depression". It was shown in their study that depression is a very relevant mental disorder affecting 340 million people globally and is projected to become the leading cause of disability and the second leading contributor to the global burden disease by the year 2020. The evidence published to date in order to determine whether exercise and physical activity can be used as therapeutic means for acute and chronic depression. Topics covered include the definition, classification criteria and treatment of depression, the efficacy of exercise and physical activity as treatments for depression, properties of exercise stimuli used in intervention programmes as well as efficacy of exercise and physical activity for treating depression in diseased individuals. Then it was found the presented evidence suggests that exercise and physical activity have beneficial effects on depression symptoms that are comparable to those of antidepressant treatment.

Robert Stanton, Peter Reaburn (2013) researched on Physical Exercise and the treatment of depression: A review of the physical exercise programme variables. A systematic review was undertaken on all RCTs reporting significant treatment effect of exercise in the treatment of depression. Studies were analysed for exercise frequency, intensity, session duration, exercise type, exercise mode, intervention duration, delivery of exercise, level and quality of supervision and compliance. Study quality was assessed using the PEDro scale. Five RCTs published since 2007 met the inclusion criteria and were subsequently analysed. Most programmes were performed three times weekly and of moderate intensity. From the study found that there is evidence for the use supervised aerobic exercise, undertaken three times weekly at moderate intensity for a minimum of seven weeks in the treatment of depression.

Sebastian Eriksson and Gunvor Gard (2013) researched on physical exercise and depression. The objective was to review studies which used physical exercise as an intervention to treat major depression, focusing on methodology, mechanisms of outcomes. Eight studies fulfilled the inclusion criteria and were included. Seven of the eight studies showed significantly improved mood and reduced depression. Physiological and psychological mechanisms may be more relevant to mechanisms of action factors. Physical exercise had the same positive effect as sertraline in two studies. Also physical exercise and sertraline given together in one of two studies had a positive effect. Three studies measured an increase in aerobic capacity, two with correlated mood improvements. One showed a correlation between increases muscle strength and reduced feeling of depression. It was found from this research that physical exercise can be an effective treatment against depression. A mood enhancing effect of exercise was identified in the interventions regardless of the mechanism of action. There is a need for more highly controlled clinical intervention studies treating depression with physical exercise, focusing on increasing the knowledge about mechanisms of action, type of exercise and frequency of exercise.

Egilw. Martinsen, (2014) Researched on physical Exercise and Depression. And in most population studies have found that physically active individuals have reduced probability for developing depression. Exercise is more effective than treatment, and not significantly different from antidepressant medication and psychotherapy. These findings are limited to mild to moderate forms of unipolar depression. Several hypotheses may explain how exercise may affect mood, and most of the focus has been on neurobiological and psychological mechanisms.

Murray CJL, Lopez AD, (2010) researched on Effects of Exercise and physical activity on depression. In their researched evidence suggests that exercise and physical activity have beneficial effects on depression symptoms that are comparable to those of antidepressant treatments.

Karen Pilkington, Graham Kirkwood, Hagen Rampes, Janet Richardson, (2013) Researched on yoga for depression. The research evidence on which they have found that yoga based interventions may prove to be an attractive option for the treatment of depression. The aim of this study is to systematically review the research evidence on the effectiveness of yoga for this indication. Searches of the major biomedical database including MEDLINE, EMBASE, CINAHL, PsycINFO and the Cochrane library were conducted. Specialist complementary and alternative medicine (CAM) and the IndMED databases were also searched and effects made to identify unpublished and ongoing research. Overall, the initial indication are of potentially beneficial effects of yoga interventions on depressive disorder.

Arndt Bussing, Andreas Michalsen, Sat Bir S. Khalsa, Shirley Telles and Karen J. Sherman shows that the effect of yoga interventions on mental health and physical health, by focussing on the evidence described. Collectively these reviews suggest a number of areas where yoga may be beneficial, but more research is required. For virtually all of them to firmly establish all of them to firmly establish such benefits. The heterogeneity among interventions and conditions studied has hampered the use of meta-analysis which indicate beneficial effects of yoga interventions and there are several randomized clinical trials (RCTs) of relatively high quality indicating beneficial effects of yoga for pain-associated disability and mental health may be practiced at least on part as a self-care behavioural treatment, provides a life-long behavioural skill, enhances self-efficacy and self-confidence and is often associated with additional positive side effect.

Ramajayam Govindraj, Sneha Karman, Shiva Ramavarambally and B.M. Gangadhar (2009) Researched on yoga is a multifaceted spiritual tool with enhanced health and well-being as one of its positive effects. The components of yoga which are very commonly applied for health benefits are asana (physical postures), pranayama (regulated breathing) and meditation. In the context of asana, yoga resembles more of a physical exercise, which may lead to the perception that yoga is another kind of physical exercise. The article aims at exploring the commonalities and differences between



yoga and physical exercise on terms of concepts, possible mechanism and effectiveness for health benefits. Physical exercises and physical components of yoga practices have several similarities, but also important differences. Emphasis on breath regulation, mindfulness during practices, and importance given to maintenance of postures are some of the elements which differentiate yoga practices from physical exercises.

Saeed SA, Antonacci DJ, Bloch RM. (2009) researched on physical exercise, yoga and meditation for depressive and anxiety. Anxiety and depression are among the most common conditions cited by those seeking treatment with complementary and alternative therapies, Such as exercise, meditation and yoga. Several studies of exercise and have demonstrated therapeutic effectiveness superior to no-activity controls and comparable with established depression and anxiety treatments. High-energy physical exercise and frequent aerobic exercise reduce symptoms of depression more than less frequent or lower-energy physical exercise. Mindful meditation and physical exercise have positive effects as adjunctive treatments for depressive disorders, although some studies show multiple methodological weaknesses for depression. Physical exercise and yoga have also show positive effects, but there are far less data on the effects of physical exercise on anxiety than for physical exercise on depression. Medication have not shown effectiveness as alternative treatments for depression and physical exercise.

Catherine Woodyard, Pilkington et al, Rily (2009) researched on therapeutic of yoga and to provide benefits of regular yoga practice. As participation rates in mind-body fitness programmes such as yoga continue to increase, it is important for health care professional to be informed about the nature of yoga and the evidence of its many therapeutic effects. Therapeutic yoga is defined as the application of yoga postures and practice to the treatment of health conditions and involves instruction in yogic practices and teaching to prevent reduce or alternative structural, physiological, emotional and spiritual pain, suffering or limitations. Results from this study show that yogic practices enhance muscular strength and body flexibility, promote and improve respiratory and cardiovascular function, promote recovery from and treatment of addiction, reduce stress, anxiety, depression and chronic pain, improve sleep patterns, and enhance overall well-being and quality of life.

## RATIONALE

Involvement in structured exercise has shown promise in alleviating symptoms of clinical depression. Since the early 1900s, researchers have been interested in the association between exercise and depression. Other findings support the potential of yoga as a complementary treatment of depressed patients who are taking anti-depressant medications but who are only in partial remission. Early case studies concluded that, at least for some, moderate-intensity exercise should be beneficial for depression and result in a happier mood. However, researchers have remained interested in the antidepressant effects of exercise. Many studies have examined the efficacy of exercise to reduce symptoms of depression, and the overwhelming majority of these studies have described a positive benefit associated with exercise involvement.

Since the 1970s, meditation and other stress-reduction techniques have been studied as possible treatments for depression and anxiety. One such practice, yoga, has received less attention in the medical literature, though it has become increasingly popular in recent decades.

Hence the present study is designed to assess the level of effectiveness on both physical exercises and yoga on persons with depression. Moreover, a number of studies as seen in the review, have indicated the effect of physical exercises and yoga on depressive persons, but none of such studies compared between the level of effectiveness of physical exercises and yoga, as well in the case of adolescents with depression. Keeping in view the above, the following objectives and hypothesis can be set with to assess the healing effect of physical exercise and yoga in case of adolescents with depression.

## OBJECTIVES

- To assess the effects of yogic practices on depression
- To find out the relative effectiveness of Physical exercises on depression among adolescents.

## PURPOSED HYPOTHESIS

Physical exercises and yogic practices according to the following hypothesis can be taken as reduce depression among adolescents.

- Yogic practices will reduce depression among adolescents.
- Physical exercises will reduce depression among adolescents.

## METHODOLOGY

### Research Purpose

In primary purpose of the present study works to find out the label of effectiveness of both physical exercise and yogic practices among adolescents.

### Sample

200 Students within 17 – 19 yrs., age range were randomly chosen from Adikavisarala Das College, Tirtol of the city Cuttack ages subjects. Out of which 100 subjects were given physical exercise and 100 Ss were given Yoga practice, for a session of two weeks. They were tested in a pre and post session purpose.

## TOOL USED

Both for the screening and finding procedure Beck's depression inventory was used.

Beck's depression inventory (BDI): Beck's depression inventory is a self – scoring Tools. BDI consists of twenty items. Age it is a set of questionnaire, the subject is given the questionnaire set and asked to circle the respective number of is by he answer.

After the subject completed the questionnaire, the score for each of the twenty questions will added up, by counting the number to the right of each question are marked. The highest possible total for the whole test would be sixty-three. This would mean the subject circled number three on all twenty-one questions. Since the lowest possible score for each question is zero, the lowest possible score for the test would be zero. This would mean the subject circled zero on each question. Thus the evaluation of depression according to the Table below.

Total score	Levels of depression
1-10	These ups and downs are considered normal
11-16	Mild mood disturbance
17-20	Borderline clinical depression
21-30	moderate depression
31-40	Severe depression
Over 40	Extreme depression

## PROCEDURE

100 adolescents from Adikavisarala Das College, were selected randomly and among them the depressive persons or cases are identified through Beck’s Depression Inventory tools. Among them selected 20 adolescents were taken as sample for the study. The diagnosed scores of 20 adolescents are taken as pre – session scores. After getting the screening scores by through BDI, 2 weeks of physical exercise and yogic practice training session was given. Among 20 adolescents 10 are given 3 of physical exercises where as other 10 are given 3 Of yogic practices, to study on which is more effective. Each training sessions are given for 30 minutes of time limit. The skipping ropes, cycles, mat, running shoes were provided to the cases as the test materials.

After completion of whole 2 weeks of training session period of 3 physical exercise and 3 yogic practices, again Beck’s Depression Inventory questionnaire was given. Which is concerned as post - session score. The post-session score was compared to the pre – session score to deter mind the effectiveness of physical exercise and yogic practice on depression, weather it is helpful in reducing depression or not.

## RESULTS

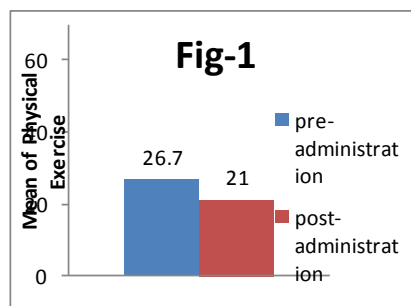
**Table no-01**

Analysis of pre-administered and post-administered variance performed on the depression scores on physical exercise of students belonging to adolescents, revealed that the post-administered depression level of adolescents, is differ high significantly {t (7.40), p>0.01} see table1. Hence, it can be said that the post-administered physical exercise is revealed helpful in reducing depression levels among adolescents.

**Table-1: Mean pre and post-administrative depression scores of adolescents of physical exercise group.**

Type	Total score	N	Mean	∑deviationsquare	S□&S□	t”
Pre-administered	267	10	26.7	(∑x <sup>2</sup> )6.65	(S□)2.10	df=N-1=9, α level (0.05)=7.40
Post-administered	210		21	(∑y <sup>2</sup> )4.83	(S□)1.50	

Sig P> 0.05



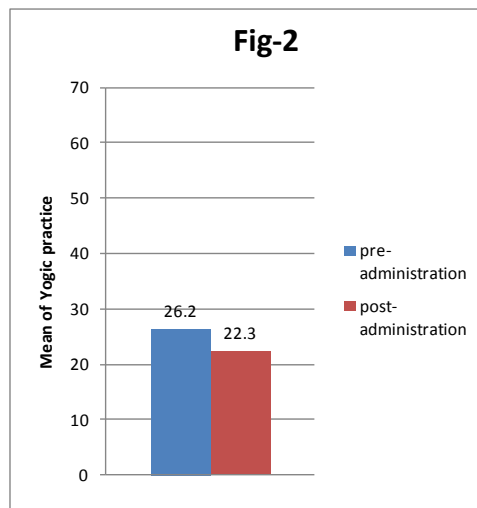
**Graph 1. Mean pre and post-administrative depression scores of adolescents of physical exercise group.**

Analysis of pre-administered and post-administered variance performed on depression scores on yogic practice of students belonging to adolescents revealed that the post-administered depression level of adolescents is differ insignificantly  $\{t(1.33), p < 0.05\}$  (see table). Hence, it can be said that the post-administered of yogic practice with depressive adolescents is revealed ineffective in reducing depression level among them. In other words, yogic practices with depressive adolescents is not so helpful in reducing depression level among adolescents.

**Table-2: Mean pre and post-administrative depression scores of adolescents of yogic practice group**

Type	Total score	N	Mean	$\Sigma$ deviation square	S□ & S□	t''
Pre-administered	262	10	26.2	$(\Sigma x^2)8.46$	2.63	df=N-1=9, α level (0.05)=1.33,
Post-administered	223		22.3	$(\Sigma y^2)6.12$	1.93	

Sig P ≠ > 0.05



**Graph { Mean pre and post-administrative depression scores of adolescents of yogic practice group.**

## DISCUSSION AND CONCLUSION

In this study, it has been attempted to find out the effectiveness of both physical exercise and yogic practice on depressive adolescents and to find out which is more effective in reducing depression among adolescents. Hence, the primary focus was to compare the effectiveness of both physical exercises and yogic practices, for which the pre-administered test and post-administered test scores were taken into consideration.

In the result it has been noticed that the post-administered test scores indicating the effect of physical exercise and yogic practices on depression was lower, highlighting the effect of yogic practices on depression level. It was further revealed that the effect of physical exercise was more prominent being very significant ( $p < 0.01$ ) whereas the effect of yogic practice was significant at 0.05 level.

A number of studies have provided evidences about the fruitful effectiveness of physical exercises and yogic practices in reducing depression among old age, patients, adolescents, substance users. P.C. Dina's, Y.Koutedakis, A.D. Flouris suggested that exercise and physical activity have beneficial effects on depression symptoms that are comparable to those of antidepressant treatment. Karen Pilkington, Graham Kirkwood, Hagen Rampes, Janet Richardson (2013) proved beneficial effects of yoga interventions on depressive disorder by researching the major biomedical database including MEDLINE, EMBASE, CINAHL, PsycINFO and the Cochrane library.

In the summary, the overall findings of this study on "Effects of physical exercise and yogic practice on depression in adolescents" strongly suggest a number of things like, both of the physical exercise and yogic practices are effective on reducing depression among adolescents. But the physical exercise concluded as more effective in reducing depression among adolescents.

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# Effect of Error Analysis and Error Correction in the Development of Writing Skills Among the Students with Mild Intellectual Disability

Dr. Bhagirathi Mahapatra\*

## ABSTRACT

In the field of Special Education, writing is included in the area of functional academics. Individuals with writing difficulties often lack many of the critical writing-related abilities and may have severe problems in communicating through writing. Thus the present study aims at finding the effective methods (error analysis and error correction) in developing writing skills, by correcting the commonly occurred errors that can help children with Intellectual Disability to learn by using a pre-test and post – test analysis. A case study method was used upon 10 students from NIOS, in National Institute for the Mentally Handicapped, Secunderabad in 15 sessions and performances were evaluated after each session. By using the Grade Level Assessment Device (GLAD) analysing common errors in 3 categories like, (1) Missing silent letters (2) Reversals (3) Auditory discrimination and three error correction strategies like (1) Cover and write (2) Puzzle game (3) spell and write, it was found that the error analysis and error correction can be considered as an effective method in correcting errors in developing writing skills among the children with mild Intellectual Disability as per the Significant difference between the pre-test and post-test sessions.

If proper strategies and techniques are applied, the children with Intellectual Disability can also be made competent in the day-to-day life.

**Keyword:** Error analysis, Error correction & Intellectual Disability

## INTRODUCTION

“Life is not so much a matter of holding good cards but of playing a poor hand well”. With these words of Robert Louis, this study is concerned primarily to investigate the effect of error analysis and error correction in the development of writing skills among the children with mild Intellectual Disability.

### Studies pertaining to Error Analysis

Fredrick, et al., (2007) conducted a study on error self-correction and spelling: improving the spelling accuracy of secondary students with disabilities in written expression. In order to improve the spelling performance of high school students with deficits in written expression, an error self-correction procedure was implemented. The participants were two tenth-grade students and one twelfth-grade student in a program for individuals with learning disabilities. Using an alternating treatments design, the effect of error self-correction was compared with . The intervention and follow-up phases were implemented over a 6-week period with maintenance checks conducted 4 and 8 weeks after the termination of instruction. Results indicated that the error self-correction procedure

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was superior to the traditional method of review during the intervention and follow-up phases, but some gains were lost during the maintenance phase.

Greenberg, K (1985) conducted a study on error analysis and the teaching of developmental writing. This study supports the use of the applied linguistics technique of error analysis (i.e., charting and analyzing patterns in language errors) in developmental writing instruction. Argues that error enables teachers to diagnose the cognitive strategies and processes used by students in writing. It also discusses teaching strategies and the approach's limitations.

Cogie, et al., (1999) conducted a study on avoiding the Proof-reading Trap: the value of the error correction process. Describes how one writing centre with many English-as-a- Second-Language (ESL) students has integrated the "cultural informant" role of tutors with their role of teaching self-editing strategies. Reviews the process of introducing ESL students to use of a learner's dictionary, minimal marking, and error logs. Offers examples of using these techniques in the writing centre and classrooms.

Anna, C and Kim (1998) conducted a study on a case study of error analysis/syntactic maturity as indicators of second language writing development. The study describes a case study of a second-language student's writing process and development over the course of two years. It provides both a qualitative and quantitative perspective to second-language development of writing. Presents a rationale for analyzing errors and syntactic maturity to better understand strategies employed by students when writing in a second language. Results indicate that the error analysis provides a valid method in diagnosing the mistakes in its roots and helped the students in understanding the type of mistakes they make.

Angela, F and Richard, K (2008) conducted a study on error analysis in phonological spelling and reading deficits in children with spelling disabilities. Spelling errors in the Wide Range Achievement Test were analyzed for 77 pairs of children, each of which included one older child with spelling disability (SD) and one spelling-level-matched younger child with normal spelling ability from the Colorado Learning Disabilities Research Center database. Spelling error analysis consisted of a percent graphotactic-accuracy (GA) score based on syllable position and existence in English, and a phonological accuracy score (PA). The SD group scored significantly worse in the PA measure and non-significantly better than controls on the GA measure. The Group x Measure interaction was significant. Spelling matched pairs had very similar scores for word recognition and orthographic coding, but the SD group exhibited significant deficits in reading measures of phonological decoding and in language measures of phonological awareness.

## **Studies pertaining to Error Correction**

Truscott, J (2007) conducted a study on the effect of error correction on learner's ability to write accurately. The paper evaluates and synthesizes research on the question of how error correction affects learner's ability to write accurately, combining qualitative analysis of the relevant studies with quantitative meta-analysis of their findings. The conclusions are that, based on existing research: (a) The best estimate is that correction has a small negative effect on learner's ability to write accurately, and (b) we can be 95% confident that if it has any actual benefits, they are very small. This analysis is followed by discussion of factors that have probably biased the findings in favour of correction groups, the implication being that the conclusions of the meta-analysis probably underestimate the failure of correction.

Worsdell, et al., (2005) conducted a study on analysis of response repetition as an error-correction strategy during writing words. A great deal is known about the effects of positive reinforcement on response acquisition; by contrast much less research has been conducted

on contingencies applied to errors. They examined the effects of response repetition as an error-correction procedure on the writing word performance of 11 adults with developmental disabilities. Study 1 compared single-response (SR) repetition, and multiple responses (MR) repetition, and results showed that all 6 participants acquired more words with the multiple response procedure. Study 2 compared multiple-response error correction following every incorrect response (continuous) and following one third of incorrect responses (intermittent), and results showed that all 6 participants acquired more words when error correction was continuous. Findings are discussed in terms of the behavioural processes by which error correction may enhance performance during acquisition.

Felce, J (2008) conducted a study on teaching picture-to- object relations in picture- based requesting by children with autism: A comparison between error prevention and error correction teaching procedures. This study compared two teaching procedure, for teaching relations between objects and pictures. Participants were two groups of children with autism, aged between 3 and 7 years. The results were the group receiving the error prevention-based teaching made significantly fewer errors during the teaching phases and in their learning outcome test for correspondences between all combinations of pictures and objects. The error prevention teaching procedure would seem to provide a more efficient and ecologically valid method than the error correction procedure for teaching relations between objects and their graphic based referents. Improvements in the methodology were suggested for providing a stronger basis for comparison between error correction and error prevention teaching methods.

## **STUDIES PERTAINING ERROR ANALYSIS AND ERROR CORRECTION**

James, M and Hendrickson (1976) conducted a study on error analysis and selective correction in the Adult ESL Classroom: An experiment. This study examined the most frequent communicative and linguistic errors made by 24 intermediate ESL students, and determined the effect of direct teacher correction upon these students' writing proficiency. Students were identified as having high or low communicative proficiency and were randomly assigned to one of two error correction treatments based on Burt and Kiparsky's global/local error distinction: correction of global errors only, or correction of global and local errors. Once a week for six consecutive weeks, the students wrote picture story descriptions in English and had their errors corrected according to assigned treatment. It was found that most communicative ('global') errors resulted from inadequate lexical knowledge, misuse of prepositions and pronouns, and seriously misspelled words. Most linguistic ("local") errors were caused by inappropriate lexical choice, misuse and omission of prepositions, misspelled words, lack of subject-verb agreement, and faulty word order. An analysis of variance revealed no significant differences in students' writing proficiency attributable to error correction treatment or to grouping according to communicative ability.

Lydia, W (1977) conducted a study on error analysis and error correction in adult learners of English as a second language. In this study 12 Spanish-speaking adults learning English as a second language were tested using the Bilingual Syntax Measure and their errors were analysed. 8 of them were subsequently presented with their errors in written form and asked to correct them. There was no variation in the proportions of errors from different sources according to academic status: The results showed that the error correction procedure which followed in this study helped the students to go through their errors which helped them in reducing it.

Andrew, D (1975) conducted a study on error analysis and error correction with respect to the training of language teachers. For years language teachers have conducted error analysis for



remedial purposes. More recently error analysis has acquiring a second language. Causes of learner errors, such as interference from the first language, confusing aspects of the second language, or learners fostering their own errors, are discussed; and teacher responses appropriate for the error type are examined, i.e., the available information about the error, the importance of correction, the ease of correction, and the characteristics of the students. Then the teacher's options as to specific treatment for correcting errors are considered. Finally, some reservations about error analysis are entertained.

## **Indian Studies**

The researcher could not find any studies, which conducted in India related to error analysis and error correction in developing writing skills among the children with mild Intellectual Disability.

## **Major findings**

- Error analysis helps in reducing the commonly made errors in the children with Intellectual Disability.
- Error analysis the students in understanding their own mistakes and the cause of these mistakes.
- Error correction helps in reducing the mistakes according to the type of the errors.
- Error correction helps the students in developing their writing language skills.
- Error correction helps in students to get rid of inferiority complex that is developed because of the errors while writing.
- Application of error correction strategy in the remediation of students helps teachers in saving their time.

## **Rationale**

These studies have been conducted in foreign countries. No such data based study was found in India. Therefore there is a need to find the effect of error analysis and error correction in development of writing skills among the children with mild Intellectual Disability in Indian context. So the primary objective of the study is :

## **Objective**

To find out the effect of error analysis and error correction in the development of writing skills among the children with mild Intellectual Disability.

## **Hypothesis**

There will be an effect of error analysis and error correction in the development of writing skills among the students with mild Intellectual Disability.

## **METHODOLOGY**

### **Research Design**

It is a single group pre-test post-test experimental study. The method of group intervention study examines the effect of error analysis and error correction in the development of writing skills

among the children with mild Intellectual Disability. This study does not have a control group. It was conducted on a group of 5 students functioning at II grade level having problems in writing.

### Selection of sample

The sample selection was done according to the purposive sampling technique. 10 children with mild Intellectual Disability studying in II grade level on National Institute of Open Schooling (NIIOS), National Institute for the Mentally Handicapped, Secunderabad were assessed using the GLAD in order to select those children in the same level. Then 5 children were selected and a test was given from a list of words for dictation selected from the Grade Level Assessment Device (GLAD). GLAD is a standardized tool used to find out the problem areas of the children with learning problems. There were twenty words given in the scale for each class level for dictation. Each word was dictated and scored in such a way that each correct answer will be getting '1' mark and for the wrong answer '0'.

**Table No.1 Sample Design**

Sl. No.	Case	Age	Sex	IQ	Class	Score in GLAD (English)
1.	S.B	M	16	58	II	49
2.	B.K	F	15	54	II	48
3.	A.G	M	15	53	II	47
4.	D.D	F	16	58	II	52
5	S.R	M	16	56	II	50

### Development of Tools and Materials

- (1) Demographic Data.
- (2) List of words-II Grade Level English.
- (3) Worksheets for Remediation

### Demographic Data

This data sheet included the name of the student, age, IQ level, level of Intellectual Disability, class in which studying, father's name, qualification and profession, mother's name, qualification and profession, type of family and other related information. This data will help to understand the environment in which the children are brought up and it will help in analyzing the results.

### List of words-Second Grade Level English

GLAD (Grade Level Assessment Device) is a standardized tool which has been developed to find out the level of academic performance in children upto Class IV. It is especially useful for children who are scholastically backward. The test items have been selected similar to class test items so that any teacher can use this scale without any difficulty. For selecting the children for the present study, the words which are given for dictation in the GLAD is taken and a checklist is prepared — Second grade level list of words – English.(Appendix D)

## Worksheets for Error Correction

Worksheets for Error Correction on the basis of error analysis were prepared according to the strategies, which were encompassed suitable for the errors taken into consideration.

Three errors were selected which the 5 children were found to be made. i.e., (1) Missing silent letters (2) Reversals (3) Auditory discrimination. Three strategies which are suitable for these three types of errors have been taken for remediation. The worksheets were developed on the basis of strategies.

## PROCEDURE

The baseline of the children was assessed using the Grade Level Assessment Device (GLAD) (Appendix C). The scores are calculated down and the children in the same level (Instructional level) were selected. A test was conducted on the words list prepared- Second grade level list of words- English, for error analysis. The data which obtained was considered as the pre-test scores. The answer sheets of the children were analyzed by the process of error analysis. The errors which they were making were grouped according to the characteristics of the errors. Then, the percentage score for the total errors was calculated. After analyzing the errors, three similar errors which those children made, were taken into consideration for error correction.

The common errors of 5 children were categorized into 3 types. (1) Missing silent letters (2) Reversals (3) Auditory discrimination. Even if the children were making other types of mistakes, the above three errors were selected because all the 5 children were making almost same type of errors in which commonly found were missing silent letters, reversals and auditory discrimination. The children used to miss some silent letters in the words, in some words they used to pre-dispose the letters resulting in reversals of words, some other words they used to write wrong because of problems in auditory discrimination.

**Table-2: Percentage of total errors and the errors concerned for the study**

Three error correction strategies were formed suitable to correct the above mentioned 3 types of errors were selected. They are (1) Cover and write (2) Puzzle game (3) spell and write. Each Session was of 30 minutes. In the first 5 sessions first strategy was used, in the next 5 sessions second strategy 'puzzle game' was used, and in final 5 sessions, third strategy 'spell and write' was used.

Sl. No.	Case	% of total errors	Missing silent letter	Reversals	Auditory discrimination
1.	S.B	60%	15%	15%	10%
2.	B.K	70%	10%	20%	15%
3.	A.G	75%	15%	15%	15%
4.	D.D	60%	15%	10%	15%
5.	S.R	70%	15%	15%	10%

Items	Case	Written words	Error
	1.	hi	Silent letter missing No errors
	2.	h i h i g h h i g h h a i p l a y p l a y	No errors
h i g h	3.	b l a y p l a y p l a y	Auditory discrimination No errors
	4.	h o o p h a p	No errors
	5.	h o p p	Confusion between 'b' and 'p' No errors
	1.	h o b h o p e v i l l e v l i e w i l e v i l e i v l	No errors Addition
	2.		Auditory discrimination Addition
	3.	g o o d g o o d g o o d d g o o d g o o d d r a k d a r k b a r k d r a k d r a k k e l l	Confusion between 'p' and 'b' No errors
p l a y	4.	k i l k e l l c i l l k i l	Addition Reversal
	5.	f o u l d f a l d f o d l f l o d	Confusion between 'v' and 'w' No errors
	1.		Reversal
	2.	f o r d s i m g c i n k s i n k s e n g s i n	No errors No errors No errors No errors No errors Reversals No errors
	3.	r e e l r e l	Confusion between 'd' and 'b' Reversal
	4.	r a e l r e a l r e l	Reversal
h o p	5.	r s i k r i s c k r i k s	Auditory discrimination Omission
	1.	r i s k r i s g	Auditory discrimination Auditory discrimination Omission
	2.		
f o l d	1.	b e g g b a g b e i g b a g g d e g	Addition
	2.	t r u t r u u t r u	Auditory discrimination Reversals
	3.	t r u t r u u t r u	Auditory discrimination Substitution
s i n g	4.	s i e z s i s e s i s s i z e s i z f e w f e w f u f u f u e	Auditory discrimination Substitution
	5.	w f u f u f u e	Confusion between 's' and 'c' Auditory discrimination
	1.	r a i n r i a n r e i n	Substitution
	2.	c r a n e r i a n s a f s a f e s a a f s a f	Omission Confusion of vowel combination

Items	Case	Written words	Error
	3.		
re a l	4.	s a f l a e f l e f a l e a f l e f l e a f	O m i s s i o n
	5.	k a v e c a w e c a v	R e v e r s a l s N o e r r o r s O m i s s i o n R e v e r s a l A d d i t i o n R e v e r s a l N o e r r o r
	1.	c a v c a v	S u b s t i t u t i o n A d d i t i o n
	2.	s e n d c e n d s e n b s i e n d s a n d	A u d i t o r y d i s c r i m i n a t i o n
	3.		A d d i t i o n A d d i t i o n
r i s k	4.		C o n f u s i o n b e t w e e n ' b ' a n d ' d '
	5.		S i l e n t l e t t e r m i s s i n g S u b s t i t u t i o n
	1.		S i l e n t l e t t e r m i s s i n g S i l e n t l e t t e r m i s s i n g N o e r r o r
	2.		R e v e r s a l
	3.		M i s s i n g s i l e n t l e t t e r s
b e g	4.		S u b s t i t u t i o n a n d o m i s s i o n N o e r r o r
	5.		S i l e n t l e t t e r m i s s i n g N o e r r o r
	1.		N o e r r o r
	2.		A u d i t o r y d i s c r i m i n a t i o n A u d i t o r y d i s c r i m i n a t i o n S u b s
	3.		t i t u t i o n
	4.		N o e r r o r R e v e r s a l
t r u e	5.		A u d i t o r y d i s c r i m i n a t i o n A u d i t o r y d i s c r i m i n a t i o n R e v e r s a l
	1.		M i s s i n g s i l e n t l e t t e r N o e r r o r
	2.		A d d i t i o n
	3.		M i s s i n g s i l e n t l e t t e r M i s s i n g s i l e n t l e t t e r R e v e r s a l
	4.		R e v e r s a l
	5.		N o e r r o r O m i s s i o n N o e r r o r
s i z e	1.		N o e r r o r O m i s s i o n N o e r r o r
	2.		C o n f u s i o n b e t w e e n ' c ' a n d ' k ' C o n f u s i o n b e t w e e n ' v ' a n d ' w ' M i s s i n g s i l e n t l e t t e r
	3.		M i s s i n g s i l e n t l e t t e r M i s s i n g s i l e n t l e t t e r N o e r r o r

The three strategies which were selected for error correction is described below. They are 'cover and write', 'puzzle game' and 'spell and write'.

**(1) Cover and write.**

Cover and write is said to be an effective strategy in teaching spelling of words. The child was given a word and asked to read then cover it with hand and write from memory. The mistakes which the child makes are asked him to analyze and correct by himself. This was the first strategy which is used in the first 5 intervention sessions.

**(2) Spell and write.**

This is the second strategy which is used in the other 5 sessions. The children are given the words and asked to divide the word into its component letters, (letter by letter) so that they can spell it and write and asked to rewrite it in the other side. Then they are asked to read the word again. In the same way the whole worksheet has to be completed.

**(3) Puzzle game.**

The last method used was puzzle game. In this method, the children were given a hidden word format to provide practice in letter sequence of spelling words. A list of spelling words and a puzzle is provided and asked to locate the hidden spelling words and to draw a circle around them in order to make that word. Then the children are asked to rewrite the word again in the next column provided. The words which they found out from the puzzle, they have to rewrite it.

**Find the hidden words and rewrite them in the box provided in the right side.**

g	d	z	b	t	w
w	l	h	l	i	
k	e	h	u	i	h
n	a	h	e	o	a
i	f	m	n	w	s
r	a	d	e	h	k
e	r	i	s	k	f

glue  
 knife  
 blow  
 risk  
 mask

**SCORING**

Before starting intervention test was given to all the children. Each strategy was used 5 sessions each and the performance was recorded after the completion of each session. The List of words-II Grade English was used for the test. Each correct answer was scored as '1' and the wrong answer as '0'. The recorded data was subjected to data analysis using proper statistical methods.

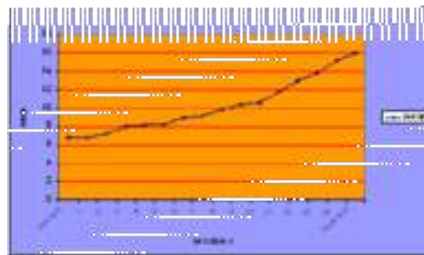
**RESULT AND DISCUSSION**

Data Analysis is very important for any research study, as the results are based on applying proper statistical methods on the scores which are formed as a result of the data collection. After completing the intervention in 15 sessions using three strategies as explained in chapter III, the carefully collected data has been analyzed for all five cases selected for the study. The data analysis is clearly described in this chapter.

**Table-4: Session wise pre-test & post-test scores - writing**

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Mean	6.8	6.8	7.2	8.0	8.2	8.2	9.0	9.2	9.8	10.4	10.6	11.8	13.0	13.8	15.2	16.0

Table. 4 depicts the mean scores in each session starting from pre-test to post-test of all the cases. The pre-test score of 6.8 which is calculated after the error analysis extended upto a score of 16.0 in the post-test which indicates that the cases has shown an remarkable improvement in the scores which was the result of the error correction strategies followed in the intervention. Thus, by giving practice through error correction strategies, the children have corrected the errors which paved the way in getting a high mean score in the post-test.



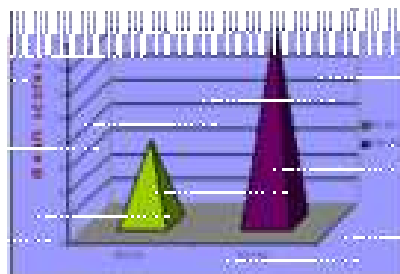
**Figure. 1: Session wise pre & post-test scores - writing**

Figure 1 represents the session-wise pre-test and post-test scores – writing. The graph shows that from the pre-test (6.80) to the post-test (16.00) there is an remarkable difference in the mean scores which indicates the improvement.

**Table. 5: Comparison of mean scores of pre-test and post-test of all the cases.**

Sessions	N	Mean	Standard deviation	T-value
Pre-test	5	6.80	1.643	11.6
Post-test	5	16.00	0.834	

Table No. 5 represents the mean scores and t-value of the pre-test and post-test of five cases. The pre-test score of 6.8, the post-test score of 16.0 and the t-value of 11.6 shows that there is a highly significant difference in the pre-test and post-test scores. This helps us to reach out in a finding that the error analysis and error correction procedure which used in this intervention was very effective.



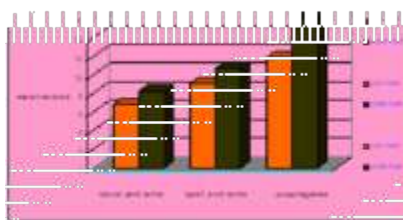
**Figure. 2: Comparison of pre-test and post-test scores of all the cases.**

Figure. 2 is the graphical representation of comparison of pre-test and post-test scores of all the cases. The bar diagram indicates there is a significant difference in the pre-test and post-test scores of the cases.

**Table-6: Comparison of the mean score of three error correction strategies -writing**

Error Correction Strategies	N	Mean	Standard deviation	T-value
Cover and Write	5	6.8	1.643	-
	5	8.2	1.483	5.715
Spell and Write	5	9.0	2.121	-
	5	10.6	2.074	6.647
Puzzle game	5	11.8	1.924	-
	5	16.0	0.707	4.707

Table No. 6 shows the mean scores and t-value of each error correction strategy, 'cover and write', 'spell and write' and 'puzzle game' accordingly. The results shows that each strategy helped in correcting the errors, as the pre-test and post-test of each strategy is showing much difference in their mean scores. The t-value of -5.715 in cover and write, 6.647 in spell and write and -4.707 in puzzle game shows that there is a significant difference in the pre-test and post-test of each strategy. When comparing between the scores gained through the strategies, it is seen that puzzle game was the most effective one.



**Figure. 3: Comparison of error correction strategies**

Figure.3 represent the bar diagram of comparison of error correction strategies. From the diagram the three strategies shows significant difference in the improvement of the cases. Puzzle game shows more improvement and difference in the pre-test post-test for each strategy is also evident from the diagram. In that way the puzzle game shows more difference in the mean scores between pre-test and post-test scores.

**Table-7: Case wise pre and post-test gain and percentage - writing**

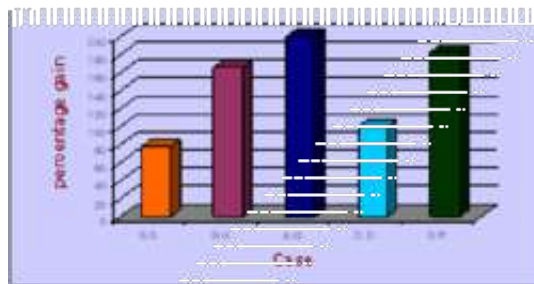
Sl. No.	Case	Pre-test	Post-test	Gain	% gain	Rank Order
1.	S.B	9	16	7	78	V
2.	B.K	6	16	10	166	III
3.	A.G	5	10	10	200	I



Sl. No.	Case	Pre-test	Post-test	Gain	% gain	Rank Order
4.	D.D	8	16	8	100	IV
5.	S.R	6	17	11	183	II

Table No 7 depicts the results of the case analysis. The pre-test and the post-test values, the gain, percentage gain and the rank order of the case are drawn out. The percentage gain shows A.G gained 200% which is the highest, and then comes S.R who gained 183%, the third place person is B.K who gained 166, and fourth place is accommodated by D.D by 100% and the last by 78%. Thus, it can be seen that, through the error analysis and the error correction strategies A.G has gained more when compared to other cases. Even if the pre-test score of

A.G was very low compared to the others, he utilized the error correction strategies very well which helped in attaining a good post-test score thus by scoring the highest percentage gain. The pre-test score of S.B was comparatively high, but when the percentage gain is calculated he got the least score.



**Figure. 4: Case wise gain (percentage)**

Figure. 4 represent the case wise percentage gain, from the graph it can be seen that Case A.G (200%) is having the highest percentage gain and case S.B (78%) is having the least.

The above described mean scores and t-value represented the whole group; about how the error analysis and error correction strategies affected the group in correcting the typical type of errors. Now the case wise study of effect of error analysis and error correction is described below.

**CASE 1- S.B**

S.B is a 16 year old boy, having and IQ of 58 belonging to a middle class family. He is attending the National Institute of Schooling in National Institute of Mentally Handicapped, Secunderabad.

He was assessed on the Grade Level Assessment Device (GLAD) to find out the class level he is standing right now. After the assessment in the Class II level, it was found that he is in the Instructional Level according to the GLAD. After this for finding the baseline of S.B he was assessed with the List of Words-II Grade Level English (Appendix E1). The pre- test score was drawn out and the error analysis procedure was done. Three errors were selected and error correction procedures were followed thereby.

Three error correction strategies were used for the intervention which was found to be suitable to correct missing silent letters, reversals and auditory discrimination. Each session of 30 minutes for 15 sessions were taken. After completing the intervention, the post-test score was recorded. The results after analyzing the data are given below.

**Table-8: Percentage scores of S.B. in each session after error analysis and error correction**

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	40	40	40	50	50	50	55	55	55	60	60	65	70	70	75	80

*Effect of error analysis and error correction in the development of writing skills among the students with mild Intellectual Disability*

Table. 8 show the percentage scores of S.B in each session. The pre-test score of 40% and the post-test score of 80% shows that there is a notable difference in the scores. This shows the error analysis and error correction procedure has helped S.B in correcting his errors and to write the words by omitting those errors.

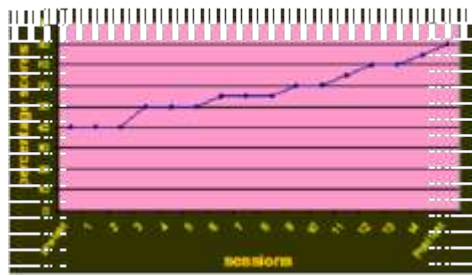
**Figure. 5: Percentage scores of S.B. in each session after error analysis and error correction**

Figure. 5 represent the percentage scores of S.B in each session. The graph shows that there is an gradual improvement from the pre-test to the post-test.

## Qualitative Analysis

S.B attended the interventions at the right time, but the problem which was found in the sessions was, he will get distracted very soon. Once he will get distracted he shows little interest in studying. Even if he was understanding the classes, his attention problem caused in scoring less marks when compared to other cases even if his pre-test score was high. While using the first two strategies 'cover and write' and, spell and write', he sometimes shows disinterest to follow. But the third strategy puzzle game created competitive spirit in him which made him learn more. Thus the more effective strategy for S.B was puzzle game.

### CASE 2 – B.K.

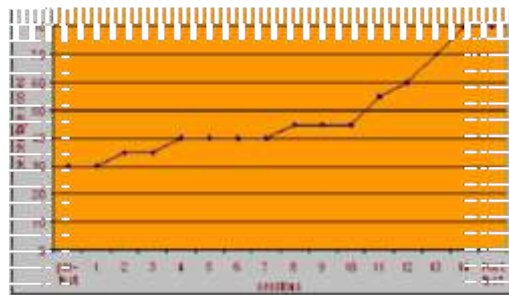
B.K is a 15 year old girl, having an IQ of 54, attending NIOS, in National Institute of Handicapped, Secunderabad belonging to a lower class family. After assessing with GLAD, she got a score of 45 which shows she is in Instructional level in English.

By administering the List of words-Second Grade Level English, the pre-test score was calculated (Appendix E2). As described earlier three errors were selected for giving intervention. As such 15 sessions were taken for intervention and the post-test score was recorded. The results are given below.

**Table-9**

Sessions	Pre-test	1	2 3	4	5 6	7	8	9	10	11 12	13	14	Post-test
Percentage scores	30	30	35 35	40	40 40	40	45	45	45	55 60	70	80	80

Table. 9 show the percentage scores of B.K in each session. The percentage score in pre-test is 30% and the post-test is 80%. The percentage gain was 166% which made her placed in III position. Her pre-test score was very low but her post-test score is comparatively a better one. This shows that the error analysis and error correction procedure was very effective for her in correcting the errors.



**Figure. 6: Percentage scores of B.K in each session after error analysis and error correction**

Figure. 6 represent the percentage score of B.K in each session. From the graph it is very clear that there is a great difference from the pre-test score and the post-test which shows that B.K has gained so much from the intervention.

**Qualitative Data**

B.K arrived for the intervention promptly everyday. She was very calm and also very slow in whatever she does. Her writing speed was very slow which sometimes made the sessions lag more then 30 minutes. She needed so much time to understand the classes, the worksheet practices also she did more. It was noticed that once she gets an idea about the things which are taught, she never commits mistakes. Thus it was observed that solving of root causes made the chance of making mistakes low. On the three above mentioned strategies, she co-operated very well in all of them. The scores and the interest she has shown while using the puzzle game shows that, this strategy is more effective for B.K.

**CASE 3 – A.G**

A.G is a 15 year old boy, having an I.Q of 53 is attending NIOS, National Institute for the Handicapped, Secunderabad. He belongs to a middle class family. He was assessed using GLAD to calculate the baseline, in which he scored 43, thus in an Instructional Level. By taking the pre-test score by administering List of Words- Second Grade Level English (Appendix E3), in which he got 5, the lowest score when compared to all the cases. As mentioned above, 15 sessions intervention was given, and the post-test score was calculated. The results are represented below.

**Table. 10: Percentage scores of A.G in each session after error analysis and error correction**

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	25	25	25	30	30	30	30	35	35	35	40	45	45	55	70	75

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Table. 10 Figure No. 7 shows the percentage scores of A.G in each session after error analysis and error correction procedure. The pre-test score is 5 and the post-test score is 10. The percentage score in pre-test is 25% and the post-test score is 75%. This shows there is a great difference in the pre-test and the post-test score. Thus, it can be point out that the error analysis and the error correction strategies have made a great improvement in A.G in reducing the chances of error while writing.

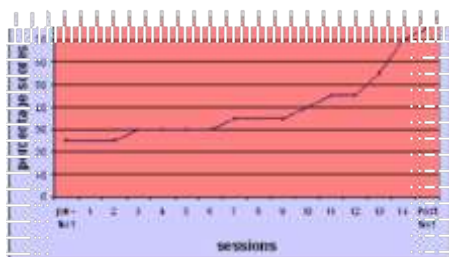
**Figure. 7: Percentage scores of A.G in each session after error analysis and error correction**

Figure. 7 represent the percentage gain Of A.G in each session. It shows that there is a very good improvement in the scores from pre-test to the post-test.

## Qualitative Analysis

A.G is an obedient very calm natured student who attended all the sessions regularly. He listens the instructions very carefully and feels to get the word completed very fast. His learning rate was slow when compared to other cases. He needed extra support and explanations. The mistakes he make even in the worksheets because of carelessness was more and made him feel worried so much.

He was very attentive and while writing he always spells each letter by letter. In the three strategies, the third strategy puzzle game made him very much interested in doing and wanted to finish first. When he was reaching the final sessions he was very much aware of his carelessness and tends to reduce making mistakes. He got the first place in percentage gain in case analysis is because of his dedication to work.

## CASE 4 – D.D

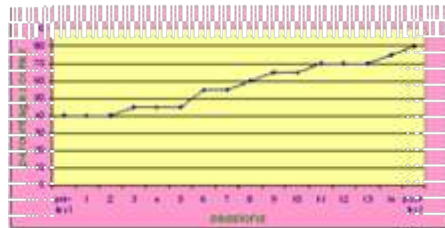
D.D is a 16 year old girl, having an IQ of 58 attending NIOS, in National Institute for Handicapped, Secunderabad. She belongs to a lower class family. She was assessed with GLAD on English, and she scored 52 in that which says she is in Instructional Level.

As described earlier, pre-test was conducted to take out the baseline. Then error analysis was done, to select the errors (Appendix E4). The three errors were taken into consideration for error correction. Then 15 sessions intervention was given. Finally post-test was done and the performance was recorded. The results are summarized below

**Table-11: Percentage scores of D.D in each session after error analysis and error correction**

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	40	40	40	45	45	45	55	55	60	65	65	70	70	70	75	80

Table. 10 represent the percentage scores of D.D in each session. In the pre-test she got 40% and in the post-test she got 80%, which is showing that the error analysis and error correction was effective for her. Her percentage gain is 100% which kept her in IV position. The pre-test and post-test results shows very much difference which reveals of effect of error analysis and error correction.



**Figure. 8: Percentage scores of D.D in each session after error analysis and error correction**

Figure. 8 shows the graphical representation of D.D in each session, indicating that there is a gradual improvement in the scores from the pre-test to the post-test.

### Qualitative Analysis

D.D is a very co-operative girl who has shown great interest in the sessions. She always helps other cases in doing the worksheets whoever needed more help. She got comparatively a fair score in the pre-test and the post-test results shows that she has utilized the error analysis and error correction strategy in correcting her mistakes. The main problem was she was getting distracted very soon and was attending other external matters. This made disturbance in attention and affected the learning process. After the intervention she was able to correct her errors.

In the three strategies, the second strategy spell and write and the third strategy puzzle game helped her in correcting the errors more. The puzzle game was creating more interesting because it was based on a game. The overall performance shows that there is a great effect in error analysis and error correction in the writing skill of D.D.

### CASE 5 – S.R

S.R is a 16 year old boy, having an IQ of 56, attending NIOS, National Institute of Mentally Handicapped, Secunderabad. He belongs to a middle class family. He was assessed in GLAD

in which he scored 50, that is he in Instructional Level. Then a pre-test was conducted to get the baseline of S.R (Appendix E5). As mentioned, 15 session intervention was carried out, and then the post-test results were recorded. The interpretation of results is given below.

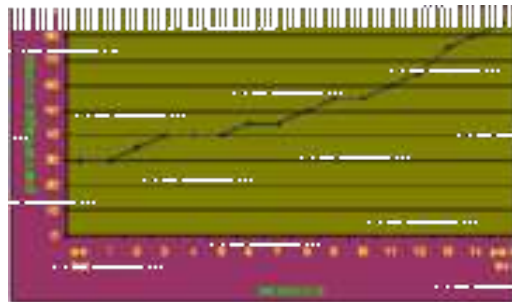
**Table-12: Percentage scores of S.R in writing after error analysis and error**

Sessions	Pre-test	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Post-test
Percentage scores	30	30	35	40	40	40	45	45	50	55	55	60	65	75	80	85

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## CORRECTION

Table. 11 represent the percentage scores of S.R in each session. In the pre-test hi score was 30% and the post-test his score was 85%. This shows there is a evident difference in the pre-test and post-test score of S.R in writing by reducing errors. The percentage gain is 183% and he stands in II position in the group. The difference in the pre-test and post-test score shows that the error analysis and error correction has much effect in S.R.



**Figure. 9: Percentage scores of S.R in writing after error analysis and error correction**

Figure. 9 represents the session wise improvement of S.R which shows that there is a remarkable difference in the scores from the pre-test to the post-test.

## Qualitative Analysis

S.R was a boy who learns fast when compared to the other cases in the group. But he was not so punctual in the classes, so for him some days one or two sessions extra were taken in order to complete the 15 sessions. In the class, he responds very well to the questions and follows the instructions quickly. After writing he always checks his answer by asking the teacher and makes the corrections himself. In the three strategies, puzzle game aroused so much competitive spirit in him as the other children and helped him gain more compared to the other strategies. The learning rate of S.R was so fast, that made him attain II place among the group. He was an obedient student and helped other students in his group in doing the worksheets and also when somebody arises any doubts he himself tried to clear the doubts. Thus the analyzed results show that the error analysis and error correction has much effect in writing of S.R.

## Summary of the Results

All the five cases were given pre-test, there were slight differences in the scores, the errors which the students commonly makes was analyzed and the similar errors which was seen was taken into consideration for the intervention and thus the cases are selected accordingly. At the end of each session the performance were recorded and the post-test was conducted, then the percentage gains were calculated. This helped to compare the performance of each case. The improvement of all the five cases was measured and interpreted. The findings are entered in the next chapter.

The results and discussion gives a clear cut idea of the overall research work. This chapter summarizes the major findings of the study titled "A study on effect of error analysis and error correction in developing writing skills among the children with mild Intellectual Disability". Its limitations and scope for future studies also have been discussed.

The pre-test scores of all the five cases have been calculated and intervention was given for a period of 15 sessions. The performance was recorded and the post-test scores were taken out. The entire data was subjected for data analysis and the results were interpreted. The effectiveness of error analysis and error correction was studied and the comparison between then error correction strategies was done according to the scores of the cases.

The mean scores of the total cases from pre-test to post-test shows that there is a great improvement in the cases in their writing by correcting the errors. The t-value calculated for pre-test and the post-test shows that there is a significant difference the pre-test and post- test of the cases which stresses that the error analysis and error correction procedure was very effective in writing.

The errors which were taken into consideration after error analysis for intervention was missing silent letters, reversals and auditory discrimination. As these were commonly making errors and according to the priority of correcting those errors, they were selected for error correction. Three strategies which were found to be suitable for correcting these errors were selected for error correction. They were Cover and Write, Spell and Write, Puzzle Game.

All the five cases used (S.B, B.K, A.G, D.D and S.R) the three strategies appropriately. The last strategy was found to be more effective for all of them and it created interest and competitive spirit in them to do the worksheets. Thus, the score level also raised for all of them in the last 5 sessions may be the previously used two strategies also made chances in improvement for them, but puzzle game has found to be more effective.

The reasons for the above results may be because,

- Each case was given chance to correct their errors by self.
- Enough time was there to think about the errors they commits and way to correct them.
- In each 30 minutes session only three errors were taken into consideration.
- Colourful materials were introduced for making the learning interesting.
- The root causes of the errors are found out and given remediation.
- In addition to usage of strategies, verbal instructions were given based on rules in writing.

Thus, the study reveals that Error Analysis and Error Correction Procedure are very effective in developing writing skills. The strategies can be changed according to the errors and the level of children.

Almost similar results have been shown in some of the earlier studies conducted which was given in the review of literature. Angelina, K.S and Jefry, S.W (2002) indicated that error analysis procedure is very effective in teaching mathematics simple calculations by pointing the causes of errors to the children. During the intervention the researcher made use of this, and one of the reasons for improvement in learning is this point.

Davy, G (2000) in his study about the effect of error correction in teaching English words indicated that attention problems were reduced while using different error correction strategies. In this study the researcher found that the interesting games helps in creating interest in children to learn and while correcting their in such ways helps in reducing the inferiority complex caused by the mistakes.

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Francis, F.P (2003) in his research conducted on error correction strategies for teaching grammar rules in English among primary students indicates that using different strategies through games will arise spirit of learning in students more compared to conventional method of teaching. This information helped the researcher in including game like strategy in her study which supported the study.

Michael et al (2005) indicated that the student's participation was more using the error correction strategies and helped them in finding the errors of their own while reading. During the intervention, the researcher also had the same observation with the cases.

## MAJOR FINDINGS

- The mean score of five cases increased from 6.8 to 16.0 which shows the improvement of the cases in the pre-test to the post-test which proves the hypothesis that 'The error analysis and error correction has been found to be an effective method in correcting errors by developing writing skills among the children with mild Intellectual Disability'.
- Significant difference was there between the pre-test and post-test scores, as the t- value of 11.6 shows that it is highly significant. Thus there is a remarkable difference between the pre-test and the post-test.
- The error correction strategy 'puzzle game' was found to be more effective as the mean difference is showing a value of -5.400 which is more higher when compared to the other strategies.
- The case A.G with mild Intellectual Disability (IQ 53) gained more through the error analysis and error correction as his percentage is 200 which is the highest percentage among the cases.

## LIMITATIONS

- The sample was very small. Therefore generalization of the findings may be difficult.
- The duration of the study was very short.
- Only three strategies were selected for intervention, so effectiveness of other strategies was not compared.
- There was only one group; if there are three groups to compare the three strategies the results would have been more reliable.

## FUTURE RESEARCH

1. There is a scope for a study with large sample with longer duration.
2. There is a scope for an experimental study with experimental and control group.
3. There is a scope for introducing more strategies for error correction.
4. There is a scope for a comparative study with error analysis and error correction with other techniques to develop writing skills.



## CONCLUSION

The present study was conducted in order to find the effective methods in developing writing skills, by correcting the commonly occurred errors and also throws light for future research, for developing different error correction techniques, which will help children with Intellectual Disability to learn. If proper strategies and techniques are applied, the children with Intellectual Disability can also be made competent in the day-to-day life.

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# Caregivers work Burden Affects the QOL of Schizophrenia

Dr. Bichitrananda Swain\*

## ABSTRACT

Introduction- Schizophrenia is a dark shadow in an individual's life. The number of people with schizophrenia in the world, particularly in developing countries is increasing. Caregivers of patients with schizophrenia are under the burden of continuous and difficult processes. Patients with schizophrenia are frequently hospitalised and usually need long term care and treatment in order to reduce negative impacts. Families in India are involved in most aspects of care for persons with several mental illnesses. Determination of the factors related to caregiver burden in schizophrenia may help find the strategies to decrease the burden. There is a definite paucity of Indian studies looking into the impact of caregiver's work burden on the quality of life of patients with schizophrenia.

In this study thirty caregivers of patients under treatment for schizophrenia were included in the study. The Caregiver Burden Scale was used for the assessment of caregiver burden. Socio demographical data was obtained through case history and direct interview with the patient and the concerned caregiver. The present study showed that caregivers of patients with schizophrenia experience 43% i.e. mild to moderate burden while taking care of their relatives. So, the results data suggests that taking care of patients with schizophrenia has a mild to moderate level of burden on the respective caregivers

**Keyword:** Caregivers, Work Burden, & QOL

## INTRODUCTION

In the present study the findings of previous researchers on various aspects of caregiver burden and its effects on schizophrenia is highlighted. Some of the findings (**Ahmetkokurcan et al, 2014**) evaluate the burnout of schizophrenia patients' caregivers and to determine the possible relationships between socio-demographic characteristics, symptomatology, perceived social support and the burnout profile of the caregivers. The subjects included in the study are 76 schizophrenia patients diagnosed according to the DSM-IV-TR criteria and their caregivers. A socio-demographic form, the scale for the assessment of positive symptoms and the scale for the assessment of negative symptoms were applied to evaluate the severity of the symptoms. The Maslach burnout inventory for caregivers and the multidimensional scale of perceived social support were applied to the caregivers of the patients. The collected data were analysed via student's t-test, the one way analysis of variance, and Pearson's correlation analysis. The burnout profile of the caregivers was highly correlated with the perceived social support of the caregivers and was also correlated with negative symptoms of the patients. Lower perceived social support was related to all subscales of the Maslach burnout inventory. The conclusion reached was that perceived social support is a

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major factor for caregiver burnout and it was highly correlated with all subscales in our study. We think that having social support provides caregivers with better feelings and so they provide better help to the patients. Appropriate approaches should be taken to intervene in the social and clinical factors that may exacerbate the burnout process.

**AbdulkareemJika Yusuf et al** (2009) conducted a study on caregiver burden among relatives of patients with schizophrenia in Katsina, Nigeria. Caring for patients with schizophrenia places an enormous burden on the caregivers. The magnitude of this problem remains largely unknown in Sub-Saharan Africa. The objective of this study was to determine the nature of the burden reported by caregiving relatives of patients with schizophrenia. A total of 129 primary caregivers of patients with schizophrenia attending the outpatient clinic of Katsina State Psychiatric Hospital were interviewed using socio-demographic data collection sheet and Zarith Burden Interview (ZBI). The mean age of the respondents was 45.1 +/- 8.9 years. Most of the caregivers were female. A high level of burden was found in 47.3% of respondents. The level of burden experienced was significantly associated with place of residence and family size. The conclusion reached was that schizophrenia is associated with a high level of caregiver burden. Efforts should be made to alleviate this burden for better outcomes in both patients and caregivers.

**BrankaAmkstMargetic et al** (2013) conducted a study on quality of life of key caregivers of schizophrenia patient and association with kinship. Reports on quality of life of family caregivers of schizophrenia patients are uncommon. Relations to different degree of kinship to caregivers' quality of life are unexplored but may be relevant. The purpose of this study was to assess the subjective quality of life of caregivers of stable outpatients with diagnosis of schizophrenia compared with controls to assess factors associated with quality of life in the population. Responses of 138 schizophrenia outpatient family caregivers to the quality of life, enjoyment and satisfaction questionnaire (QLESQ-SF) were compared to those of a sex-and-age-matched control group. Patients were assessed with positive and negative symptom scale (PANSS) and the global assessment of functioning (GAF) and data were collected for kinship relationship and hospitalisation. The results are as follows: the group of caregivers had significantly lower quality of life compared with controls ( $t=11.347$ ;  $df=271$ ;  $p=0.0001$ ). Caregivers' quality of life correlated significantly with their age and differed according to the degree of kinship and marriage status. ANCOVA with age as covariate performed to assess the differences in quality of life according to kinship, showed that parents and own children had significantly lower quality of life than patients' siblings who were also caregivers. The conclusion of the study was that quality of life of the schizophrenia patients caregivers lower in comparison to controls. It depends on the degree of kinship and caregiver's age, parents and own children have lower quality of life than siblings. Psycho-educational intervention programmes should target specific needs of the family as a whole, depending also on their age and kinship relationship.

**Aditya Gupta et al** (2014) conducted a study on psychological well-being and burden in caregivers of patients with schizophrenia. There is a definite paucity of Indian studies looking into the caregiver burden, psychological well-being and the interface between them. This work aims to study the correlation between these variables. The study sample includes 100 patients with a diagnosis of schizophrenia and their caregivers randomly selected from the patients admitted in the male and female wards of psychiatric center Jodhpur, as per inclusion and exclusion criteria. Burden assessment schedule and psychological general well-being index were used for the study. 80% of the caregivers experienced moderate levels of burden. The burden was higher among older caregivers and spouses. Psychological well-being was low in older caregivers and those with lower educational stats and higher in siblings. A strong negative correlation was found between burden and psychological well-being. The conclusion was that quality of care given to the individuals with schizophrenia depends on their primary caregivers. It thus becomes essential to plan interventions that would reduce their burden of care and thus improve their psychological well-being.

**NavneetKaur** (2014) conducted a study on caregiving burden and social support among caregivers of schizophrenic patients. Schizophrenia is a dark shadow in an individual's life. The number of people with schizophrenia in the world particularly in developing countries is increasing. The patients with schizophrenia are frequently hospitalised and usually need long term care and treatment in order to reduce negative impacts. Families in India are involved in most aspects of care for persons with several mental illnesses. Families not only provide practical help and personal care but also provide emotional support to their relatives. Quantitative research approach and correlational research design was used. The sample of 100 caregivers of schizophrenia was taken with purposive sampling technique. The structured self-report tools including a rating scale to assess caregiving burden and a rating scale to assess social support were administered to the caregivers of schizophrenic patients to collect the data. It was found that the caregiving burden and social support are negatively correlated ( $r=0.45$ ) and majority of the caregivers (50%) of schizophrenic patients suffer from severe to moderate level of caregiving burden. However most of the caregivers (62%) of the schizophrenic patients have low social support whereas no one has been found to have high social support. The level of burden experienced was significantly associated with the duration of illness and gender.

**Alejandra Caqueo et al** (2006) carried out a study on burden of care in families of patients with schizophrenia. Family caregivers of persons with schizophrenia and other disorders experience high level of burden. Most studies of family burden in schizophrenia have taken place in developed countries. The current study examined family burden and its correlates in a medium income country in South America. 41 relatives of patients with schizophrenia who were attending a public mental health outpatient service in the province of Arica, Chile were assessed on Spanish versions of the Zarit Caregiver burden scale. All caregivers show a very high degree of burden, especially mothers, older with low educational level, without an employment and who are taking care of younger patients. As developing country, Chile has a few national social welfare and community rehabilitation programs for relatives of psychiatric patients especially in this part of the country. This significantly influences the high level of burden experienced by these caregivers. These results suggest a close monitoring of carer's mental health and the provision of a family intervention and psycho-social support.

**EsraYazia et al**(2016) carried out a study on burden on caregivers of patients with schizophrenia and related factors. Caregivers of patients with schizophrenia are under the burden of continuous and difficult processes. Determination of the factors related to caregiver burden in schizophrenia may help find strategies to decrease the burden. The study aimed at investigating the factors associated with caregiver burden among relatives of patients with schizophrenia. 88 caregivers of patients under treatment for schizophrenia for at least 1year were included in the study. The zaritcargiver burden interview was used for the assessment of caregiver burden. Socio- demographical data, the level of knowledge about schizophrenia, clinical impression scale, and global assessment of functioning were used to evaluate the related factors. Caregiver burden was negatively correlated with income level and functionality of the patient and was positively correlated with the age of the caregiver, the daily time spent with the patient, and the number of hospitalisations of the patient ( $p<0.05$ ). There was no significant correlation between the caregivers knowledge about schizophrenia and caregiver burden ( $p<0.05$ ). Living in the same house with the patient was a positive predictor whereas functionality and income level of the patient and educational level of the caregivers were negative predictors ( $p<0.05$ ). This study highlighted the importance of setting targets for improving the functionality of patients in the design and implementation of rehabilitation and support programs for patients with schizophrenia. Additionally providing higher income for patients creating conditions for an independent life and increasing incentives for younger caregivers with a higher educational level may help decrease caregiver burden.

**Shu Ying Hou et al** (2008) carried out a study exploring the burden of primary family caregivers of schizophrenia patients in Taiwan. The purpose of the study was to investigate the burden of the primary family caregivers of schizophrenia patients and the factors that affect caregiver burden. A total of 126 pairs of patients and their primary family caregivers were recruited from the day care and acute wards of 2 teaching general hospitals. Demographic information was collected. All patients went through an interview with a senior psychiatrist using the brief psychiatric rating scale. The caregiver burden inventory brief version and the Chinese health questionnaire were used to assess the caregiver burden and the caregiver's health condition. One way analysis of variance and Pearson's correlation were used to analyse the relationship between demographic factors and caregiver burden. Multiple regression was used to analyse predictors of burden of caregivers. Statistical significance in this study was defined as  $P \leq 0.05$ .

0.05. The caregiver burden scores (25.9 +/- 10.7; range 3-61) indicate a moderate burden level. Among the five dimensions of burden, caregiver anxiety (2.13 +/- 0.86) was the highest, followed by dependency of the patient (1.85 +/- 1.02), feeling shame and guilt (1.56 +/- 1.02) and family interference (1.43 +/- 0.83). The burden level of stigmata (1.32 +/- 1.24) was the lowest. The physical and mental health condition of the primary family caregiver of schizophrenia patients was the most important factor determining the caregiver burden level. Comprehensive multi-disciplinary care of chronic schizophrenia patients is needed, care that supports the needs and improves the psychiatric symptoms of the patients helps to decrease the caregiver burden level and facilitates family participation in treatment.

**Pamela Grandon et al** (2005) conducted a study on primary caregivers of schizophrenia outpatients- burden and predictor variables. The study explores family burden in relation to relatives' coping strategies and social networks, as well as in relation to the patient's severity of positive and negative symptoms. Data on the severity of symptoms (positive and negative syndrome scale for schizophrenia (PANSS), social functioning scale (SFS), caregivers burden (interview on objective and subjective family burden), coping skills (Family coping questionnaire) and social support (Social network questionnaire) were gathered from a randomised sample of 101 Chilean outpatients and their primary caregivers, mostly mothers. Low levels of burden were typically found with the exception of moderate levels on general concerns for the ill- relative. A hierarchical regression analyses with four blocks showed that clinical characteristics such as higher frequency of relapses, more positive symptoms and lower independence performance, together with lower self-control attributed to the patient, decrease in social interests, and less affective support, predict burden. The results support the relevance of psycho- educational interventions where families' needs are addressed.

**Muhammad Zahid et al** (2010) carried out a study on relationship of family caregiver burden with quality of care and psychopathology in a sample of Arab subjects with schizophrenia. Although the burden experienced by families of people with schizophrenia has long been recognised as one of the most consequences of the disorder, there are no reports from the Arab world. Consecutive family caregivers of outpatients with schizophrenia were interviewed with the Involvement evaluation questionnaire IEQ-EU. Patients were interviewed with measures of needs for care, service satisfaction, quality of life and psychopathology. There were 121 caregivers. The IEQ domain scores (total= 46.9, tension= 13.4, supervision=7.9, worrying=12.9, urging=16.4) were in the middle of the range for the EU data. In regression analyses higher burden subscales scores were variously associated with caregiver lower level of education, patient's female gender and younger age, as well as patient's lower subjective QOL and needs for hospital care and not involving the patient in outdoor activities. Disruptive behaviour was the greatest determinant of global rating of burden. The results indicate that despite differences in service set-up and culture the IEQ-EU can be used in Kuwait and it has

been used in the western world, to describe the pattern of scores on the dimensions of caregiving differences with the international data reflects peculiarities of culture and type of service. Despite generous national social welfare provisions, experience of burden was the norm and was significantly associated with patient's disruptive behaviour. The results underscore the need for provision of community-based programs and continued intervention with the families in order to improve the quality of care.

**Natasha Kate et al** (2013) carried out a study on relationship of caregiver burden with coping strategies, social support, psychological morbidity and quality of life in the caregivers of schizophrenia. The aim of the study was to evaluate the relationship of caregiver burden as assessed by using hindi involvement evaluation questionnaire with coping strategies, social support, psychological morbidity and quality of life of caregivers of patients with schizophrenia. The relationship of caregiver burden with socio demographic variables and clinical variables including severity of psychopathology and level of functioning of patients was studied. The study included 100 patients with schizophrenia and their caregivers recruited by positive random sampling among the 4 domains of IEQ. Highest number of correlations emerged with tension domains. Tension domain had positive correlation with the caregiver being single, time spent incaregiving each day, and use of avoidance, collusion and coercion as coping strategies. Additionally tension domain was associated with poor quality of life in all the domains of WHO QOL BREF and was associated with higher psychological morbidity. Worrying urging I domain of IEQ correlated with frequency of visits, higher use of problem focused coping and poor physical health as per the WHO QOL BREF. Worrying urging II domain of IEQ had positive correlation with higher level of positive symptoms, lower level of functioning of the patient, younger age of the caregiver, caregiver being un-married, and higher problem focused and seeking social support as coping strategies. Supervision domain of IEQ correlated positively with lower income, being an unmarried caregiver from an urban locality and non-nuclear family. Supervision domain was associated with poor physical health as assessed by WHO QOL BREF.

## **RATIONALE OF THE STUDY**

From the study of the literature it has been found that eight out of ten studies have been conducted abroad on topics like caregiver burden among relatives of patients with schizophrenia, quality of life of key caregivers of schizophrenia patients and association with kinship, relationship of family caregiver burden with quality of care and psychopathology; to name a few. The Indian studies primarily focus on psychological well-being and burden of caregivers, relationship of caregiver burden with coping strategies, social support, psychological morbidity and quality of life in caregivers. There have been very few studies that have been conducted in India, and even fewer studies have been conducted in Odisha. No study has been previously conducted on the present research topic of impact of caregiver work burden on quality of life of patients with schizophrenia. This therefore drives me to carry out my research on the given topic in Odisha.

## **OBJECTIVES**

- To study the level of burden of caregivers who are relatives of patients with schizophrenia.
- To study the quality of life of patients with schizophrenia.

## **HYPOTHESIS**

- Higher work burden will have an impact on the quality of life of the patient.

## METHODOLOGY SAMPLE

The geographical coverage of the present study was confined to the twin cities of Cuttack and Bhubaneswar, Odisha. For the purpose of the study the categories of respondents that were covered were patients classified under ICD-10 and DSM-IV-TR and primary caregivers of these patients.

Selection of the sample: Some steps were followed for the selection of sample. First, a list of hospitals with Psychiatric Department and treatment facilities for mental patients were prepared in Cuttack & Bhubaneswar. 3 hospitals were chosen, Sriram Chandra Bhanj Medical College and Hospital, Cuttack; PradyumnaBal Memorial Hospital, Kalinga Institute of Medical Sciences, Bhubaneswar; IMS & SUM hospital- Siksha O' Anusandhan University, Bhubaneswar.

From the 3 Mental Health Centres, altogether 30 schizophrenic patients and their caregivers were covered in the study. Among them 15 patients were male and 15 were female.

## TOOLS USED

The tool used for the present study was the Caregiver Burden Scale

Description of the tool- The Caregiver Burden Scale is a 22-item self-administered questionnaire used to assess the experience of burden. The questions reflect how people sometimes feel when they are taking care of another person. It has been adapted with permission from Zarit SH, Reever KE, Bach-Peterson J. the Zarit Burden Interview, a popular caregiver self-report measure used by many aging agencies originated as a 29-item questionnaire (Zarit, Reever and Bach-Peterson, 1980). The revised version contains 22 items. Each item on the interview is a statement which the caregiver is asked to endorse using a 5-point scale. Response options range from 0(never) to 4 (nearly always). The factor structure of the Zarit Burden Interview is somewhat unclear. A number of researchers have suggested different models, but the most frequently mentioned is the two-factor model addressing personal strain and role strain. Translations of the Zarit Burden Inventory have been studied as well including versions in Chinese, Japanese, French and Portuguese.

## PROCEDURE

First, permission was taken from the authorities of the 3 hospitals and then a tentative time schedule was developed in consultation with the authorities of the aforesaid health centres for data collection. Data was collected from the schizophrenic patients and their caregivers following face-to-face interview method for the semi-literate and literate subjects. But in case of the educated subjects self-administration method was employed. Rapport was established with the patients after having casual discussion about their liking, disliking and hobbies and then the objectives of the study were explained and how the findings could be beneficial for the people like them so that they feel comfortable and relaxed while sharing necessary personal information and/or responding to different items of the psychological tests. Schizophrenic patients were selected following the ICD-10 criteria. In any case of confusion, the concerned psychiatrists were consulted.

## RESULTS

### Data Analysis

Data collected from the schizophrenic patients and their caregivers were checked and edited so that any gap or confusion identified at the preliminary stage could be clarified hence forth. The filled in data sheets were subjected to in-house thorough scrutiny and editing. Finally the data from the data sheets were entered with accuracy and precision to the computer for computational purpose.



Statistics is the science of methodology for the collection, systematic presentation, mathematical analysis and interpretation of data and for drawing inferences about the explored property in the relevant population.

*Caregivers Work Burden Affects the qol of Schizophrenia*

**Table-1: Raw Data Score For The Response Of Each Caregiver**

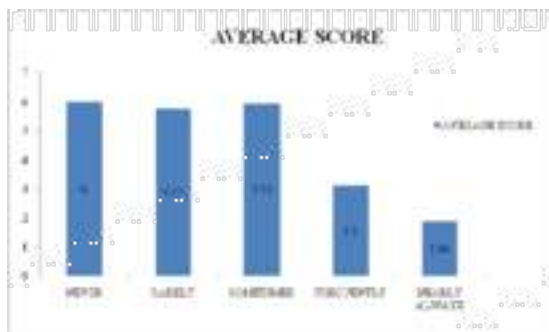
CAREGIVER NUMBER	TOTAL RESPONSE SCORE
1.	19
2.	49
3.	34
4.	59
5.	35
6.	15
7.	30
8.	28
9.	23
10.	38
11.	40
12.	31
13.	47
14.	27
15.	30
16.	29
17.	21
18.	28
19.	24
20.	50
21.	35
22.	49
23.	36
24.	37
25.	38
26.	81
27.	24

CAREGIVER NUMBER	TOTAL RESPONSE SCORE
28.	38
29.	26
30.	37

**Table-2: Average Score For Responses of Each Caregiver Caregiver No Never Rarely Sometimes Frequently Nearly Always**

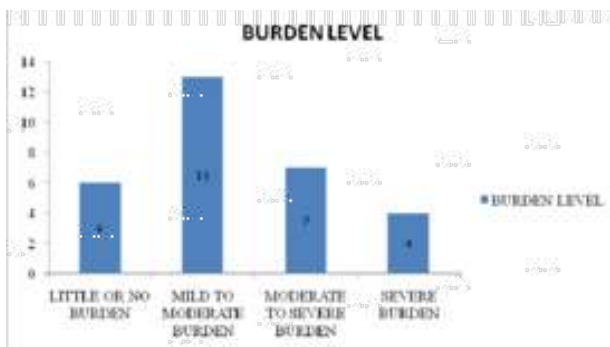
1	10	7	5	0	0
2	6	11	4	1	1
3	8	5	2	3	5
4	10	5	6	1	1
5	11	6	4	1	1
6	0	4	4	8	9
7	6	5	7	2	3
8	10	0	6	4	3
9	4	5	10	4	0
10	1	5	6	8	2
11	7	2	7	5	1
12	2	1	10	7	2
13	6	9	6	1	0
14	8	7	5	1	2
15	9	8	4	2	0
16	9	4	7	5	0
17	7	5	4	3	3
18	8	6	6	3	0
19	4	6	4	3	6
20	5	5	5	4	0
21	5	6	5	4	3
22	3	6	9	2	2
23	6	9	6	0	0
24	12	7	4	0	0
25	5	5	7	2	0
26	6	9	7	1	1
27	4	8	7	3	1

28	0	4	7	7	5
29	6	5	10	2	1
30	2	7	4	6	4
TOTAL	180	172	177	93	56
AVERAGE SCORE	6	5.733333333	5.933333333	3.1	1.866666667



**Table-3: Average Percentage of Responses For All Caregivers**

TOTAL NUMBER OF CAREGIVERS (N=30)	NEVER	RARELY	SOMETIMES	FRRQUENTLY	NEARLY ALWAYS
	20%	19.1% OR 19%	19.17% OR 19%	10.33% OR 10%	6.2% OR 6%



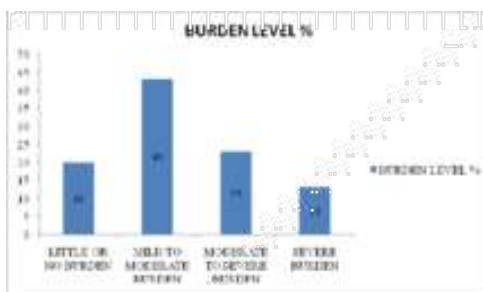
**Figure 2: Average Percentage of Responses**

**Table-4: The Levels of Burden Corresponding to the Responses of the Caregivers**

Total Number of Caregivers	Burden Level			
	LITTLE OR NO BURDEN	MILD TO MODERATE BURDEN	MODERATE TO SEVERE BURDEN	SEVERE BURDEN
30	6	13	7	4

**Table-5: Burden Level Percentage experienced By the Caregivers Based on their Responses.**

TOTAL NUMBER OF PATIENTS	LITTLE OR NO BURDEN	MILD TO MODERATE BURDEN	MODERATE TO SEVERE BURDEN	SEVERE BURDEN
30	20%	43.33% OR 43%	23.33% OR 23%	13.33% OR 13%



**Figure 4: Level of Burden Percentage experienced By the Caregivers Based on their Responses**

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Appendix  
Caregiver Burden Scal

	Circle the response that best describes how you feel.	Never	Rvety	Sometimes	Quite frequently	Nearly always
1.	Do you feel that your relative ask for more help than he she needs?	0	1	2	3	4
2.	Do you feel that because of the time you speed with your relative that you don't have enough time for yourself?	0	1	2	3	4
3.	Do you feel stressed between caning for your relative and trying to meet other resuspending for your family or work?	0	1	2	3	4
4.	Do you feel embarrassed over your relative behavior?	0	1	2	3	4
5.	Do you feel angry when you are around your relative?	0	1	2	3	4
6.	Do you feel that your relative currently affects your relationships, with other family member or friends in a negative way?	0	1	2	3	4
7.	Are you afraid what the future holds for your relative?	0	1	2	3	4

8.	Do you feel your relative is dependent on you?	0	1	2	3	4
9.	Do you feel strained when you are around your relative?	0	1	2	3	4
10.	Do you feel your health has because of you environment with you relative?	0	1	2	3	4
11.	Do you feel that you don't have as much privacy as you would like because of your relative?	0	1	2	3	4
12.	Do you feel that your social life has suffered because you are caring for your relative?	0	1	2	3	4
13.	Do you feel uncomfortable about having friends over because of your relative?	0	1	2	3	4
14.	Do you feel that your relative seems to expect you to take care off his/her as if you were the only one her/she could depend on?	0	1	2	3	4
15.	Do you feel that you don't have enough money to we care of your relative in addition to the rest of your expenses?	0	1	2	3	4
16.	Do you feel that you will be unable to we care of your relative much longer?	0	1	2	3	4
17.	Do you feel you have lost control of your life since your relative lines?	0	1	2	3	4
18.	Do you wish you could leave the care of your relative to someone eise?	0	1	2	3	4
19.	Do you feel uncertain about what to do about your relative?	0	1	2	3	4
20.	Do you feel you should be doing more for your relative?	0	1	2	3	4
21.	Do you feel you could do a better job in caring for your relative?	0	1	2	3	4
22.	Over all, how burdened do you fell in caring for your relative?	0	1	2	3	4

*Instructions for caregiver: The questions above reflect how persons sometimes feel when they are raking care of another person. After each sentence, circle the would that best describes how after you feel that way. There are no night or wrong answers.*

*Scoring instructions: Add the scores for the 22 questions. The total score ranges from 0 to gg. A high score correlates with higher level of burden.*

# Occupational Stress Among Nurses of Laxmi Hospital, Jajpur Road on the Quality of Life

Mr. Lalatendu Kar\*

## ABSTRACT

In modern life style stress at workplace is unavoidable. Nature of all works is changing with great speed since last few decades and is continuing to change with greater speed. Nursing has been identified as an occupation that has high level of stress. Job stress brought about hazardous impact not only a nurses 'health but also on their abilities to cope with job demands. The management and reduction of occupational stress are recognized as key factors in promoting of employee well –being. Nursing is one of the many disciplines contributing to a huge body of research into the cause and effect of the ill –defined phenomenon of occupational stress. Occupational stress has always been a major cause of ill health reduction in production and health hazards leading to human mistakes. There may good health related working conditions suggested by managements which is followed the nurses on hospital units (Gray –Toft & Anderson, 1981). The NSS is based on the psychological model of stress described by Appley and Trumbull (1967), Larzarus (1966) and Lazarus and Folkman (1984) have been used the questionnaire.

**Keyword:** Nursing Stress Scale(NSS)

## INTRODUCTION

Now a day's stress is very common for all of us, people who are suffering from many kind of stress in their daily basis of life that may related (physical stress, psychological stress, environmental stress etc). It can be caused by both good and bad experiences. When stress comes people are not able to do their own work properly. Stress can affect both your body and mind. People under large amounts of stress can become tired, sick and unable to concentrate or think clearly. Sometimes they even suffer mental breakdowns. In a medical or biological context stress is a physical, mental tension. stress can be external ( from the environment, psychological or social situations ) or internal ( illness or from a medical procedure ). stress can initiate the fight or flight response, a complex reaction of neurologic and endocrine systems. If stress is intense, continuous, and repeated, it becomes a negative phenomenon or "distress ", which can lead to physical illness or psychological disorders. It is usually observed that nursing profession undergoes tremendous stress which affects on work performance of nurses and ultimately affects the patients care. Nurses perhaps are the best friend of patients. It is important for the nurses and the organizations to identify the stressful factors.

## CAUSES OF STRESS

There are several causes of stress, how stress affects you, the difference between good or positive stress and bad or negative stress and some common facts that how stress affects people today.

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Many different things can causes of stress – from physical (such as fear of something dangerous) to emotional (such as worry over your family or job). Some of the most common sources of stress are:

Survival stress – This is a common response to danger in all people and animals. When you are afraid that someone or something may physically hurt you, your body naturally responds with a burst of energy so that you will be better able to survive the dangerous situations (fight) or escape it all together (flight). This is survival stress

Internal stress –Internal stress is when people make themselves stressed. This often happens when we worry about things we can't control or put ourselves in situations we know will cause of stress.

Environmental stress – This is a response to things around you that cause stress, such as noise, crowding and pressure from work or family.

Fatigue and overwork – This kind of stress builds up over a long time and can take a hard toll on your body. It can be caused by working too much or too hard at your job, school or home. It can also be caused by not knowing how to manage your time well or how to take time out for rest and relaxation. Job stress: long hour's difficult co- workers, and lack of appreciation and just a few factors that contribute to job stress. Relationship stress:

***Personal problems that can cause stress includes***

- (i) Health
- (ii) Emotional problem
- (iii) Our relationship
- (iv) Major life changes
- (v) Stress due to family conflict
- (vi) Money

***Social and Job issues***

- (i) Our surroundings
- (ii) Our social situation
- (iii) Our job
- (iv) Unemployment
- (v) Personal beliefs
- (vi) Post traumatic stress

**IMPACT OF STRESS**

Stress affects everyone in different ways, there are two major types of stress one is beneficial and motivating / good stress and stress that causes anxiety and even health problem / bad stress.

Stress is key for survival, but too much stress can be detrimental. Emotional stress can be stays around for weeks or months can weaken the immune system and cause high blood pressure, fatigue, depression, anxiety and even disease.

**OCCUPATIONAL STRSSS**

Occupational stress is a recognized problem in health care workers. Nursing has been identified as an occupation that has high level of stress. It is import to recognize that stress is a state not an illness, which may be experienced as a result of an exposure to a wide range of work demands and

in turn can contribute to an equally wide range of outcomes, which may concern the employees health and be an illness or an injury or changes in his / her behavior and lifestyle. Work related stress might be related to poor work organization such as – work design, work system and approaches to management; it can also be related to a lack of control over work processes, unsatisfactory working conditions, or lack of support from colleagues and supervisor. Some common stressor in these specialties include poor working relationship between nurses or other health team members, demanding communication and relationship with patients `relatives, emergency causes, high workload, understaffed and lack of support or feedback from their seniors.

## **IMPACT OF STRESS ON NURSES**

Nursing as an occupation has high level of stress that has a significant health problem and is a major cause of ill health at work. Occupational stress encounter by critical care nursing could affect by the nurses performance and reduce the capabilities to provide appropriate care to the patients in the ICU, hence the magnitude of stress need to be assessed. It is a significant global problem for all nurses. For nurses and their organization, job stress is very expensive and its side effects become clean in the form of tiredness, harsh behavior, anxiety, increase of blood pressure, lack of self confidence, lack of job satisfaction, and decrease in efficiency.

Occupational stress as a common subject in nursing literature. It was considered because of its relationship with various diseases and interaction with job resources, various studies reveals that nursing profession is challenging due to occupational stress and burnouts. Factors such as low skill discretion, high job demands, low support from supervisors, organizational conditions among were recognize to have significance to occupational stress.

A study revealed that challenges face by nurses is due to unbalance in their daily work. It was discussed that nurses work under stressful environments, however they are expected to provide holistic and good quality care to the patients. This proved unbalanced motivation and work.

## **REVIEW OF LITERATURE**

According to Namrata Mohit, Mahadeo Shinde, Apeksha Gulavani conducted a study in 2012 to find out occupational stress among nurses (working at tertiary care hospital, karad, Maharashtra, India). Job related stress increasingly large disorder among nurses stress has a cost for individual in terms of health, wellbeing or for organization in terms of absenteeism and turnover which directly affect quality of patient care. A study was conducted on 100 staff nurses modified expanded nurses stress was use and requires 15-30 minutes to solve for each questionnaire. Majority 49% of nurses had reported frequent occurrence of stress, due to uncertainty of concerning treatment. Whereas maximum 48% of nurses reported frequent occurrence of stress, due to dealing with patient and majority 59% due to worked as cause of stress. Inadequate emotional preparation is reported by 68%, 24% and 8% of nurses as occasional. Frequent and extremely occurring cause of stress respectively maximum 49% reported frequency occurrence, due to conflict with the doctors. 52% nurses reported frequent occurrence of stress due to conflict with peers as a cause of stress. Maximum 50% of nurses reported extreme occurrence of stress due to death and dying as cause of stress. 53% nurses reported occasional, frequent and extreme cause of stress respectively. 48% nurses reported occasional, frequent and extreme cause of stress due to discrimination as a cause of stress respectively. There was no significant association found between occupational stress, age, sex professional education, year of experience. Nurses have faced frequent occurrence of stress which could have negative impact on organizational climate in the future.



According to Raffagnino (2017) to find out the antecedent and outcomes the work family conflict in nursing. Conflict (WFC) in nursing assessing the antecedent consequence of nurse's productivity, physical and psychological wellbeing. He searched electronic database, focusing on articles published in English and Italian during the period of 2005 to 2017. From the 1,180 studies found, he selected 20 papers for this integrative review. The findings expressed was narrative synthesis, showing that WFC is a stressor in nursing and most analysis risk factors centered on the workplace. Some shortcoming of our review includes methodological aspects although our synthesis of the 28 studies provided an evidence base for future.

Riidha Restila (1978) conducted a study an occupational stress and related factors among nurses. Stress is one of the factors that affect the performance level of nurses. According to nursing time more than 60% of nurses say that they gave experienced effect of work related stress, such as physical and mental health problem. this systematic review research aimed at exploring factor related to occupational stress among hospital nurses involved 16 research. This research consists of 8 researches from Indonesia in the year 2000-2013 and another 8 research obtained from international journal in the year of 2010-2015. The entire research using cross sectional study design, sample size ranged from 24-2613. There are difference in the average number of research sample in the Indonesia research and international research ( $p$  value=0.004). Total number of variables studied we are 70 independent variables. The number of variables studied ranged from 4-25 per study. The most studied variables we are married status, age, job demands, and length of employment, shift work, promotion and gender. From 9 variables most studied, promotion variable has a significant percentage of the highest  $p$  value, while the gender variable has no significant. Reference number used ranged from 7-59 reference. No difference reference amount Indonesia research and Indonesia research ( $p$  value=0.806). From the results of this study can be seen at list 9 variables most studied of the stress on the nurses.

## **RATIONALE**

Stress is very common thing for all nurses who working in private sector. It is a field full of numerous challenges and the number of nurses suffering from work related stress is alarming. there are number of factors attributed to cause of stress among nurses. Pressure due to the inability to meet work demands is also a contributing factor to stress among nurses. Many researchers working on occupational stress among nurses. According to Ridha Restila (1978-0575) stress is one of the factors that affect the performance level of the nurse. In nursing time, more than 60% of nurses says they have experienced effect of work related stress, such as, physical and mental health problem one phenomenon/is needed to examined that the impact of stress among nurses on the quality of service and how they manage both stress and service during work period of time and how stress is affecting both health and performance.

## **OBJECTIVES**

It is extremely important to clearly specify the objective of the study as it generally describe the goal of the researcher, which he wants to study and inform the reader accordingly. The objective of the present study;

- To identify the stress level of nurses working in Laxmi hospital.
- To identify occupational related stress of nurses of Laxmi hospital on the quality of service.
- To study the Impact of stress among nurses on their occupational services.

## **PROPOSED HYPOTHESIS**

- The high level of stress among nurses will leads lower quality of occupational service.

## METHOD OF THE STUDY

Research design is a conceptual structure within which the research is conducted. It constitutes the blue print for the collection, measurement and analysis of data. Research design means the research problem is the preparation of the design of the research problem. A research design is the arrangement of the conditions for data and analysis of data in a manner

## SAMPLE

It is the act, process, or technique of selecting a suitable simple, or a representative part of nurses for the purpose of the determining characteristics of the nurses, who were working in LAXMI HOSPITAL, JAJPUR ROAD, Odisha.

## SAMPLING FRAME AND PROCEDURE

Selection of sample was followed below mentioned criteria.

Gender: for gender sample of both male and female employees have been considered.

Qualification: postgraduate, diploma, 3 years diploma onwards has been considered.

Employment: the entire sample selected was working as private sector (Laxmi hospital, jajpur road).

Age:- The age limit were 19-34 years.

Location: sample has been collected private sector (Laxmi hospital).

## TOOLS USED

The nursing stress scale (NSS) is questionnaire based on the psychological model of stress. Stress occurs when the equilibrium or well being of the person is perceived to be threatened, conflict, ambiguity and work overload and critical factors in creating stress.

The NSS is based on the psychological model, of stress described by Appley and Trumbull (1967), Lazarus (1966), and Lazarus and Folkman (1984), has been used for data gathering and assimilation. The NSS, a 34-item, 4- point Likert Scale was designed to measured the frequency and major sources of stress experienced by nurses on hospital units (Gray-Toft and Anderson, 1981). The nursing stress scale (NSS) is questionnaire based on the psychological model of stress. Stress occurs when the equilibrium or well being of the person is perceived to be threatened, conflict, ambiguity and work overload and critical factors in creating stress. The scale contains 34 items on occupational stress on 9 subscales of NSS

## PROCEDURE

Nurses are playing vital role in every hospital. Nursing is one of the most challenging services especially in private sector. In private sector they have so pressure of work. Nursing is an extremely stressful job by nature and nurses use several strategies to deal with the stressor of their job. It was concluded through research that the nature of work is the biggest stressor for nurses. The work itself included the setting of work place, the monotony of work and over burden of work. Some other stressor that was identified criticism by a physician, conflict with a supervisor etc. Occupational stress is one of the most hazards now days. Especially in private sector, it's very stressful to handle, workers are suffering from many kind of physical or mental health problem because of it. It accounts much of the physical illness, substance abuse and family problems.

Concerning the demographic background, such as age, experience, education etc are presented in. It is acknowledge that the data were collected from Laxmi hospital. This research was based on occupational stress of nurses which was consisting of 15 nurse’s respondents. Age of the respondents are admits that under 21 to 32. Experience in medical practice shows that some respondents have experience 1-4 years and other respondents have medical experience from 8-10 years. This study also assist that some of respondents education have completed 2 years diploma and some respondent completed BSC and other some respondents completed postgraduate in diploma. They all have doing night shift 15 days in moth. Some nurse between them are married and they also handle both family and service as much it can possible for them.

There are many useful definitions that describe in detail what stress is and what occupational stress means. A scientific definition could be that stress is one’s reactions of the body to any demands place upon it. While this definition is scientifically accurate, it does not help in a practical sense when we wish to deal with, and manage occupational stress. The national institute of occupational safety and health in the U.S.came up with a much more piratical definition of job stress: it is the harmful physical and emotional response that occurred when the requirements of the job do not match the capabilities, responses or needs of the workers. Nurses are exposed to various stress sources from the physical, psychological and social environments. Furthermore, socio demographic determinants of the participants of this study (age, marital status and education level) proved to significantly influence stress perception at work. Nurses who are married experienced more stress than single nurses. It has been suggested that such higher stress level results from multiple and complex that these women have to perform: wife, mother, and employee. Headache is one of the symptoms of professional stress and is usually associated with general fatigue and sleep disturbance. Stressful situations such as heavy workload and problems with peers and supervisors are correlated with high incidence of headache.

The scale contains 34 items on occupational stress on 9 subscales of NSS, were analyzed using descriptive statistics.

## RESULTS AND DISCUSSION

This chapter elaborates the results of the study and also discusses the findings in detail. The current chapter divided into five sections. The first section is about stress and occupational stress and the second section is about NSS described by Appley and Trumbull (1967), Lazarus (1966) and Lazarusand Folkman (1984), the questionnaire based on the demographic information. The forth section is analysis the data with the help of hypothesis and present results in detail. Section five presents the discussion. This section presents and discusses the various data on the respondents. The total sample used in this study is 35 item of nurses who working in Laxmi hospital (jajpur Road). Their results are presented item wise in percentage.

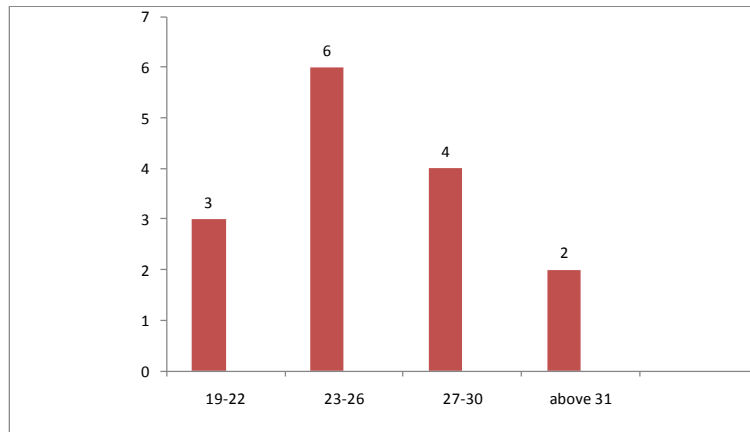
**Table-1: The demographic data of nurses working in Laxmi Hospital.**

Item name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL	Percentage (%)
DD	4	3	2	2	3	3	4	2	4	2	0	3	4	3	2	41/15=2.7	273.33
CP	2	2	5	5	1	0	4	2	3	3	3	3	4	2	3	42/15=2.8	280
IP	6	5	6	4	3	5	7	7	7	8	5	7	2	5	3	77/15=5.1	513.33
PP	4	3	5	2	2	2	3	1	4	4	4	3	4	4	4	49/15=3.2	326.66

PS	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	4/15=0.2	26.66
WL	7	2	6	6	4	4	6	2	4	7	7	5	4	1	6	71/15=4.73	473.33
UT	3	1	5	2	1	1	3	1	2	1	2	3	4	2	1	32/15=2.1	213.33
PF	1	0	6	2	1	0	1	1	1	2	0	2	0	0	1	18/15=1.2	120
D	1	0	2	0	0	2	1	0	1	1	0	0	0	0	0	8/15=0.53	53.33

**Table-2: Showing age levels of 15 nurses.**

Age levels	No. of respondents	Percentage (%)
19-22	3	0.2
23-26	6	0.4
27-30	4	0.26
Above 31	2	0.13
Total	15	0.99



**Figure no-1:-It shows the age level of nurses.**

**Table-3: Educational Qualification of Nurses.**

Nurses Education	Respondent	Percentage (%)
2 years diploma	4	0.26
3 years diploma	6	0.4
Postgraduate diploma	1	0.06
Others	4	0.26
Total	15	0.98

The table shows that 0.26 of% nurses are doing 2 years in diploma, 0.4% of nurses are complete 3 years in diploma, 0.06% of nurses are doing postgraduate in diploma, and 0.26% of nurses are doing other courses like BSC, ANM etc.

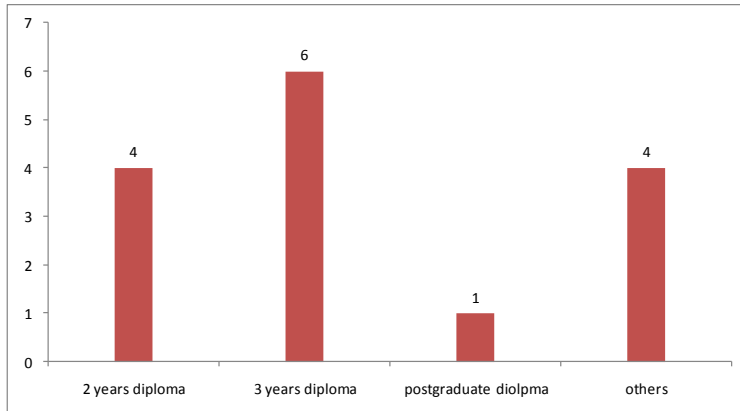


Figure no-2:-It shows the educational qualification of nurses.

Table-4: Experience as a qualified nurses

Nurses qualification	Experience	Percentage (%)
1 month -4 years	7	0.53
5 years -8 years	4	0.30
9 years-12 years	2	0.15
Total	13	0.98

The table shows that 0.53% of nurses are experience during 1 month to 4 years, 0.30% of nurses are experience between 5 years to 8 years and 0.15% of nurses are experience within 9 years to 12 years.

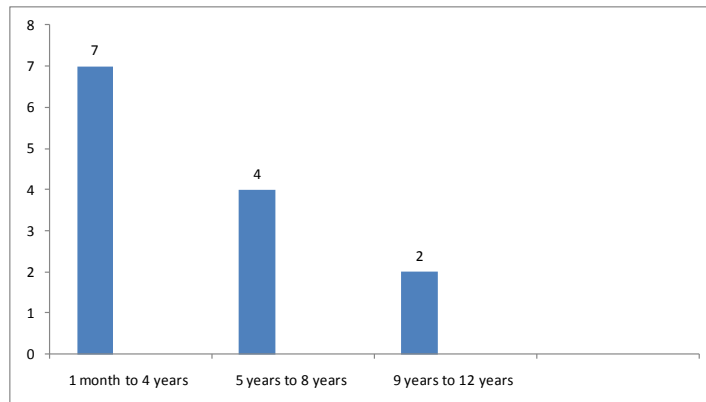


Figure no-3:-It shows Experience as qualified nurses

**Table- 5: It shows the occupational stress of nurse on occupational quality of services on 9 subscales of NSS**

Sr. No	Sub-scales	Codes	Mean
1.	Death &Dying	DD	273.33
2.	Conflict with physician	CP	280
3.	Inadequate preparation	IP	513.33
4.	Problem with peers	PP	326.66
5.	Problem with supervisor	PS	26.66
6.	Workload	WL	473.33
7.	Uncertainty among treatment	UT	213.33
8.	Patient and their family	PF	120
9.		D	53.33

The table shows the effects of occupational stress among nurses in quality of services different sub dimension of stress like:- Death and Dying (DD), Conflict with Physicians (CP), Inadequate Preparation (IP), Problem with Peers (PP), Problem with Supervisor (PS), Workload (WL), Uncertainty among Treatment (UT), Patient and their Family (PF), D, and many other factors that the nurses in Laxmi hospital was not satisfied.

## SUMMARY AND CONCLUSION

The present study tried to examine, measuring the level of occupational stress of nurses who working in Laxmi hospital. The various definition, concepts, and theoretical perspective of stress level of nurses has been discussed and elaborated in detail. Mostly nurses highlighted their perceptions of stress, burnout, as influence on career development of nurses. The findings of the nurses who working in private sector, are as follows: the experience of job satisfaction is relatively less among private hospital nurses. The review of literature has been done on various topic and. The causes of stress. The aim of the study to measure the occupational stress level of Laxmi hospital nurses and compare it with their occupational services.

In the present study, research designed has been used and 15 nurses in Laxmi hospital have been considered. The sample has been considered from of the nurses and from the age groups between 19-32 years. The sample has been collected from private hospital (Laxmi hospital in jajpur road). The analysis has also covered to find out the performance difference due to stress. Nursing stress scale questionnaire (1967) Appley and Trumbull, Lazarus (1966) and Lazarus and Folkman (1984) describe the psychological model of stress. The demographic information has been presented separately with the help of table and graphs with their percentage which interpretation. NSS questionnaire 1967(Appley and Trumbull. It can be concluded that nurses have got more stress during the work period of time especially when they attempt certain cases and making decision concerning a patient when the physician is not available. The private hospital nurses have got more stress compare to others. So the stress among nurses has great impact on the quality of their occupational services.

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# Prosocial Behaviour in Relation to Emotional Intelligence and Ethical Decision Making of Young Adults

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## ABSTRACT

The primary purpose of this empirical investigation was to assess and compare emotional intelligence, ethical decision making and prosocial behaviour of male and female young adults. The study also examined the relationship amongst emotional intelligence, ethical decision making and prosocial behaviour and the role of emotional intelligence and ethical decision making in predicting prosocial behaviour of young adults. The sample consisted of one hundred and twenty young adults, with equal number of males and females in the age group of twenty to twenty two. The self-report questionnaires consisting of demographic information, scales of emotional intelligence, ethical decision making, and altruism was administered individually on the subjects. The results revealed no significant difference between male and female students on measures of emotional intelligence and ethical decision making. The male students were better than females in prosocial behaviour. There is relationship between emotional intelligence and ethical decision making but it does not predict prosocial behaviour.

**Keywords:** Emotional Intelligence. Ethical Decision Making. Prosocial Behaviour.

## EMOTIONAL INTELLIGENCE

Emotional intelligence refers to the capability of individuals to recognize their own and other people's emotions, to discern between different feelings and label them appropriately to use emotional information to guide thinking and behaviour, and to manage or adjust emotions to adapt environment or achieve ones goal.

The term emotional intelligence first appeared in a 1964 paper by Michael Beldon and then again it appeared in 1966 paper by B.Leuner entitled emotional intelligence and emancipation which appeared in the psychotherapeutic journal: practice of child psychology and child psychiatry. In the year 1983 Howard Gardner focused on EQ through his book frames of mind: the theory of intelligence. He introduced the traditional type of intelligence such as IQ is not sufficient enough to fully explain the cognitive ability. Instead of focusing only on EQ, he introduced the idea of multiple intelligence. It includes interpersonal intelligence (the capacity to understand oneself, to appreciate one's feelings, fears and motivation).

The first published use of the term EQ in an article by Keith Beasley in 1987 in the British Mensa magazine. According to Keith Beasley emotional intelligence is quite important than intelligence quotient. EQ is the vital parameter which helps to judge a person. EQ probably best defined as once ability to feel where as IQ being one's ability to think or put another way, EQ is the heart where as

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IQ is the brain. A person with high EQ is easily moved and openly expresses his or her feelings. A person with high EQ may behave violently in a society until and unless he or she gets encouragement to increase the positive side of his or her sensitive nature. Currently there are three main models of emotional intelligence.

- A. Ability model-**It indicates the way in which emotions facilitates thought and understanding. This model emphasizes that emotional intelligence includes four types of abilities- Perceiving emotions, using emotions, understanding emotions, managing emotions
- B. Mixed model-** Mixed model is introduced by Daniel Goleman. He emphasized on emotional intelligence as a wide array of competencies and skill that drive leadership performance. Goleman's model focuses on five main constructs- Self awareness, Self regulation, Social skill, Empathy, Motivation.  
Goleman includes a set of emotional competencies with each construct of emotional intelligence. He clearly defines that emotional competencies are not innate talents but they are learned capabilities which must be worked on and can be developed to achieve outstanding performance. According to Goleman individual's are born with a general emotional intelligence that determines their potential for learning emotional competencies.
- C. Trait model-** Trait emotional intelligence is a constellation of emotional self-perception located at the lower level of personality. In other words it can be described as an individual's self perceptions of their emotional abilities.  
Higher emotional intelligence is positively correlated with
  1. Better social relation for children 2). Better social relation for adults- 3). Highly emotionally intelligent individuals are perceived more positively by others- 4). Better family and intimate relationship 5). Better academic achievement- 6). Better social relation 7). Better psychological well-being.

## ETHICAL DECISION MAKING

Ethics or moral philosophy is a branch of philosophy that involves systematizing and recommending concepts of right and wrong conduct. The term ethics is derived from the ancient Greek word "Ethikos", which is derived from the word ethos. It is the branch of knowledge which deals with moral principles and concerned with values.

According to R. Kidder the "standard definitions of ethics have typically included such phrases as 'the science of the ideal human character' or 'the science of moral duty. According to Richard William Paul and Linda Elder define ethics is a set of concepts and principles which guide individuals in determining what behaviour helps or harms sentient creatures. The Cambridge dictionary of Philosophy states that the word ethics is basically used interchangeably with morality and sometimes it is used more narrowly to mean the moral principles of a particular tradition, group or individual. Paul and Elder state that most people confuse ethics with behaving in accordance with social conventions, religious beliefs and the law and don't treat ethics as a stand-alone concept.

As bioethicist Larry Churchill has written that ethics emphasizes on the capacity to think critically about moral values and direct our actions in terms of such values which is a generic human capacity.

## Prosocial Behaviour

**Prosocial behaviour** is also called as "voluntary behaviour intended to benefit another", is considered a social behaviour which aims for the benefits of other people or society as a whole, such as helping, sharing, donating, co-operating, and volunteering." Obeying the rules and conforming to socially accepted behaviours (such as stopping at a "Stop" sign or paying for groceries) are also

regarded as prosocial behaviours. These actions may be motivated by empathy and by concern about the welfare and rights of others, as well as for egoistic or practical concerns, such as one's social status or reputation, hope for direct or indirect reciprocity, or adherence to one's perceived system of fairness. It may also be motivated by altruism, though the existence of pure altruism is somewhat disputed, and some have argued that this falls into philosophical rather than psychological realm of debate. Evidence suggests that prosociality is central to the well-being of social groups across a range of scales. Empathy is a strong motive in eliciting prosocial behaviour, and has deep evolutionary roots.

Prosocial behaviour fosters positive traits that are beneficial for children and society. Evolutionary psychologists use theories such as kin-selection theory and inclusive fitness as an explanation for why prosocial behavioural tendencies are passed down generationally, according to the evolutionary fitness displayed by those who engaged in prosocial acts. Encouraging prosocial behaviour may also require decreasing or eliminating undesirable social behaviours.

## REVIEW OF LITERATURE

The relationship between emotional intelligence and ethical decision making has been reported in some research studies. Wagih L. (2013) has conducted a study on the Relationship between emotional intelligence and ethical decision making in educational leaders and found significant relationship between emotional intelligence and ethical decision making. This study explains that a leader who is more emotionally intelligent is good in ethical decision making than those who are less emotionally intelligent. It also clarifies that emotional intelligence is a predictor to ethical decision making. People with high emotional intelligence are capable of dealing with problems in an easier way than those with low emotional intelligence.

Mordhah N. (2015) in a study on administrative employees found that the four dimensions of emotional intelligence are significantly correlated, some positively and some negatively, with different levels of ethical behaviour.

Virginia k B. (2004) has conducted a study on affective morality: the role of emotions in the ethical decision making process. From the study it has been found that the role of emotions plays a significant role in the ethical decision making process, traditionally which is conceptualized as an exclusively logical process. The study examined the process by which the arousal of emotions impacts individuals' moral deliberation and ultimately moral behaviour. This study provides evidence to support a new conceptualization of moral deliberation, one in which emotion is necessary component leading to ethical decisions and ethical behaviour. This result showed peer influence as a stronger determinant of ethical behaviour than individual's affective reactions. Specifically, an individual seems to be more likely to engage in ethical behaviour when his or her peers also behave ethically. Although affective reactions were not a significant antecedent to ethical behaviour, the form of the relationship observed does suggest that moral deliberation may be shaped by individual affective reaction and future study is warranted. Furthermore, the results suggest that previous conceptualizations of moral deliberation have been incomplete in their neglect to include the role of affect or emotion.

Scott (2004) has conducted a study on the Relationship between emotional intelligence and ethical decision making on administrators and students. According to the findings of this study emotional intelligence is a predictor of ethical decision making, with education being the only significant contributing factor. Based on the findings of this study educators should focus on developing emotional intelligence throughout a student's school years that both emotional intelligence and ethical decision making may be positively influenced.

In another study on the relationship between emotional intelligence and moral development among police officers, Smith (2009) found that police officers with high level of emotional intelligence have high levels of moral development, which helps them to deal with problems in a better way.

Watts (2013) has conducted a study on the relationship of ethical behaviour in the work place to emotional intelligence and perceived leader integrity. He did not find any relationship between emotional intelligence and but found a moderate relationship between perceived leader integrity and perceived ethical behaviour.

In India Agarwal N., Chaudhary N. (2013) has conducted a study on the role of emotional intelligence in ethical decision making. The finding show emotional intelligence is an essential factor responsible for determining success in life and psychological wellbeing seems to play an important role in taking the ethical decision. People with high emotional intelligence perform well in all the area and cope better with environment and takes the right decision.

## **RATIONALE**

From the review of literature we came to know that emotional intelligence influences the ethical decision making of individuals. It is also found that a person who is more emotionally intelligent is good in ethical decision making than those who are less emotionally intelligent. It also clarifies that emotional intelligence is a predictor of ethical decision making. People with high emotional intelligence are capable of dealing with problems in a more easier way than those with low emotional intelligence. (Wagih L.,2013).Such persons tend to be more successful in life than others.

It is also found from the review of literature that people who have high emotional intelligence show more prosocial behaviour than people who have less emotional intelligence. So prosocial behaviour is influenced by the level of emotional intelligence a person has.(Horodeka,Anna,2013) the persons who are good in perceiving the emotions, those who have the ability to understand their own emotions as well as others emotions well and persons with the capability of utilizing their emotions in a precise manner show more prosocial behaviour than those who do not have it.

The review of literature clearly indicates relationship between emotional intelligence and ethical decision making and also emotional intelligence and prosocial behaviour. It implies that a person with high emotional intelligence can be a good ethical decision maker and a person with high emotional intelligence can also be good in showing prosocial behaviour but there are no research evidences which show the link amongst these three constructs. In this context, the present study aims at investigating this linkage. Whether there is any influence on prosocial behaviour if a person has the ability to understand his own emotions as well as others emotions well, if he has the ability to utilize it properly from the perspective of the society are to be investigated. It is also pertinent to study the role of ethical decision making in prosocial behaviour.

## **OBJECTIVES**

The following are the objectives of the present study.

1. To assess and compare the emotional intelligence, ethical decision making and prosocial behaviour of male and female students.
2. To find out the degree of relationship amongst different dimensions of emotional intelligence, total emotional intelligence, dimensions of ethical decision making and prosocial behaviour.
3. To find out the predictor of prosocial behaviour.

## **METHOD OF THE STUDY**

Participants

The sample of the study consisted of 120 (60 females, 60 males) adolescents in the age group of 20 to 24 years enrolled in Utkal University during the spring semester of 2016-2017 academic year. For selection of participants convenient sampling method was used and self-report questionnaires were given by researcher to the students of different departments.

## DATA COLLECTION INSTRUMENTS

Schutte self report emotional intelligence test (SSEIT); it is a 33 item self report inventory scale. This questionnaire has four dimensions namely perception of emotion, managing own emotions, managing others emotions and utilization of emotions. Scores can range from 33 to 165, with higher scores indicating more characteristics of emotional intelligence.

Ethical position questionnaire, The ethics position questionnaire is developed to measure individual differences in moral thought, prompted in part by curiosity about the diverse reactions to social psychological studies: Milgrams (1963) classic studies of obedience to authority. Milgram(1964) in defending his work, noted the wide range of opinions on the morality of his methods. The subscales are divided into two parts. One is relativism scores and the other one is idealism score.

Self-report altruism scale. The Self-Report Altruism (SRA) Scale has an easy-to-administer; self-report format consists of the 20 items. Respondents are instructed to rate the frequency with which they have engaged in the altruistic behaviours using the categories 'Never', 'Once', 'More Than Once', 'Often' and 'Very Often'.

A demographic information form was prepared by the researcher to collect information about name, age, gender, educational qualification, and stream.

## STATISTICAL ANALYSIS

Descriptive statistics, correlation and regression analysis were used to interpret the data.

## PROCEDURE

The investigator personally met the subjects to collect the data. The subjects were asked to complete the questionnaire sets namely scales of Schutte self report emotional intelligence test(SSEIT), Ethical position questionnaire, Self-Report Altruism (SRA) Scale along with demographic information form. The subjects were thoroughly explained about the purpose of the study, confidentiality issues and instructions about the tests. There was no time limit. Then the scoring was completed as per the manuals of the inventories.

## RESULT

Table-1- Group means and standard deviations of male and female students on measures of emotional intelligence and its dimensions, ethical decision making and its dimensions and prosocial behaviour.

Variables		MALE	FEMALE	TOTAL
Emotional intelligence	Mean	126.25	126.25	126.25
	SD	13.016	14.401	13.668
Perception of emotion	MEAN	35.07	34.82	34.94
	SD	5.45	5.52	5.47

Variables		MALE	FEMALE	TOTAL
Understanding own emotion	MEAN	35.97	36.13	36.05
	SD	3.92	5.00	4.47
Understanding. others emotion	MEAN	30.95	30.93	30.94
	SD	4.57	4.49	4.56
Utilization of emotion	MEAN	24.63	24.33	24.48
	SD	3.59	3.87	3.72
Ethical decision making	MEAN	76.88	77.48	77.18
	SD	9.98	11.59	10.78
Idealism	MEAN	39.32	39.92	39.62
	SD	5.60	6.07	5.83
Relativism	MEAN	37.72	37.57	37.64
	SD	5.96	6.63	6.28
Prosocial behaviour	MEAN	57.95	47.55	52.75
	SD	14.93	13.88	15.27

Through the inspection of descriptive statistics it is found that male students have higher mean scores in measures of perception of emotion and prosocial behaviour. Whereas female students have higher mean score in measures of understanding own emotion and ethical decision making.

Table 2-*t* values showing difference between male and female students on measures of emotional intelligence and its dimensions, ethical decision making and its dimensions and prosocial behaviour.

Measures	<i>t</i>	<i>df</i>	<i>P</i>
Emo. Intelligence	.000	118	1.000
Per. Of emotion	.249	118	.804
Und. Own emotion	-.203	118	.840
Und. Others emotion	.020	118	.984
Uti. Of emotion	.440	118	.661
Eth. Decision making	-.304	118	.762
Idealism	-.562	118	.575
Relativism	.130	118	.897
Prosocial behaviour	3.951	118	.000**

\**P*<.05

\*\**P*<.01

Table- 2 shows the t-values calculated to find out the significance of difference between male and female students. The groups differed significantly on measures of prosocial behaviour only. Table-3-Inter-correlations amongst measures of emotional intelligence and its dimensions, ethical decision making and its dimensions and prosocial behaviour.

	El(Total)	Per. of emotion	Und. own emotion	Und. others emotion	Uti. of emotions	EDM	Idealism	Relativism	Prosocial behaviour
El(Total)	1	0.717 **	0.828 **	0.720 **	0.719 **	0.54 **	0.507 **	0.451 **	0.018
Per.of emotion		1	0.479 **	0.232 *	0.315 **	0.35 **	0.319 **	0.310 **	0.103
Und.own emotion			1	0.502 **	0.507 **	0.39 **	0.365 **	0.332 **	-0.065
Und. others emotion				1	0.483 **	0.48 **	0.479 **	0.376 **	-0.011
Uti.of emotion					1	0.40 **	0.399 **	0.328 **	-0.006
EDM						1	0.877 **	0.896 **	-.051
Idealism							1	0.584 **	-0.151
Relativism								1	0.049
Pro. Behaviour									1

\*P< .05  
 \*\* P< .01

Table-3 shows the inter correlation matrix of emotional intelligence and its subscales, ethical decision making and its subscales and prosocial behaviour of adolescents. The analysis reveals that emotional intelligence has significant positive correlation with its subscales, namely perception of emotion, understanding own emotion, understanding others emotion and utilization of emotion. (r=.717,p<0.01,r=.828,p<0.01,r=.720,,p<0.01,r=.719,p<0.01,respectively.). Emotional intelligence also has significant positive correlation with ethical decision making and its two subscales, namely idealism and relativism.(r=.541,p<0.01,r=.507,p<0.01,r=.451,p<0.01 respectively).

Table-4-Regression predicting prosocial behaviour from the four facets of emotional intelligence and two facets of ethical decision making.

Model summary

Model	R	R Square	Adjusted R square	Std. Error of the Estimate
1	.295	.087	.038	14.980

Predictors(constant): Perception of emotion, Understanding own emotion, Understanding others emotion, Utilization of emotion, Relativism, Idealism.

Regression results has been measured to predict prosocial behaviour from the different subgroups of emotional intelligence and different subgroups of ethical decision making. The Correlation of Coefficient is. 295- The r square is. 087. Thus the model comprising of different subscales of emotional intelligence and ethical decision making can explain about 8.7% of total variance in prosocial behaviour.

Mode (constant)	Unstandardized coefficients		Standardized coefficient	t	Sig.
	B	Std.error	Beta		
PERCEPTION OF EMOTION	.546	.249	.196	.1856	.066
UNDERSTANDING OWN EMOTION	-.582	.410	-.170	-1.421	.158
UNDERSTANDING OTHERS EMOTIONS	.314	.387	.094	.811	.419
UTILIZATION OF EMOTION	.170	.458	.041	.371	.712
IDEALISM	-.835	.315	-.319	-2.651	.009**
RELATIVISM	.443	.276	.182	1.606	.111

Dependent Variable: total score of prosocial behaviour.

The Coefficient (table) shows that only one subscale of ethical decision making which is idealism has significant relationship with prosocial behaviour. Except this subscale all other subscales of emotional intelligence namely perception of emotion, understanding own emotion, understanding others emotion, utilization of emotion and ethical decision making (idealism) an insignificant relationship with prosocial behaviour. Idealism has a positive and significant relationship with emotional intelligence at .01 level that explains 17.9% of total variance. Agreeableness is having a negative relationship with spiritual intelligence which is not significant. Idealism has a positive and significant relationship with spiritual intelligence at .05 level that explains 18.2% of total variance in prosocial behaviour.

## DISCUSSION AND CONCLUSION

The purpose of this present investigation was to assess and compare male and female students on measures of emotional intelligence, ethical decision making and prosocial behaviour and also to examine the relationship between emotional intelligence, ethical decision making and prosocial behaviour. It also examined whether emotional intelligence and ethical decision making predicted prosocial behaviour or not. The result shows no significant difference between male and female students in emotional intelligence and ethical decision making but the difference was statistically significant in prosocial behaviour. This may be due to the differential socialization practices adopted in our society which leads to males being more outgoing than females. The females are more reserved

and show insecurity and hence do not show prosocial behaviour like the males. Through the inspection of descriptive statistics it is also found that female students have higher mean score in measures of understanding own emotion and ethical decision making. It may be due to the socio-cultural influence in which the females grow up. In Indian culture where women learn from the beginning to accept themselves as the way the society perceives them not as the way they want to be. So due to this reason a women struggle a lot with her. There are more chances to have negative emotions always but as they learn to adjust with the problem they develop the capacity to understand them well in compared to males. The analysis of descriptive statistics also reveals that males are better in perception of emotion than females which may be due to more exposure, free social interactions and higher permissiveness of males. In India females are not allowed to interact with people the way the males interact, so this may be a disadvantage for females because of which they are not so good in perceiving emotion.

The result also revealed significant correlation amongst total emotional intelligence, as well as the four subscales namely perception of emotion, understanding own emotion, understanding others emotion and utilization of emotion and ethical decision making as well as the two subscales namely idealism and relativism but the total emotional intelligence as well as the four subscales: perception of emotion, understanding own emotion, understanding others emotion and utilization of emotion also did not have significant correlation with prosocial behaviour. Likewise, the total ethical decision making as well as the two subscales idealism and relativism also did not have a significant correlation with prosocial behaviour. It may be due to better emotional intelligence and ethical decision making which restricts the individual to show certain type of prosocial behaviour. Because a good ethical decision maker always does something which is true and acceptable in the eyes of the society. So when a prosocial behaviour is associated with some kind of negative outcome a good ethical decision maker with high emotional intelligence may not be willing perform the act.

The result also revealed that total emotional intelligence as well as the four subscales perception of emotion, understanding own emotion, understanding others emotion and utilization of emotion did not predict prosocial behaviour. Moreover, the total ethical decision making as well as one subscale relativism also did not predict prosocial behaviour. But the subscale idealism has predicted prosocial behaviour.

## MAJOR IMPLICATIONS

The general finding of this study are important from the theoretical as well as applied point of view. Theoretically, the results explicate factors that could be studied more systematically in a framework of cause and effect relationship. Possible causal links can be hypothesized and rigorous experimental situations can be investigated later. In applied terms, specific feedbacks can be communicated for developing prosocial behaviour in young adults.

The findings have clearly shown that there is a positive significant correlation between emotional intelligence and ethical decision making. It is implied that young adults with high emotional intelligence can take better decision in their lives than those who have low emotional intelligence, but it may not predict their prosocial behaviour. In our day to day life many people who understand others emotions well, even before expressing something in words they recognize how they are feeling still they do not come forward to help others. Similarly in case of ethical decision making and prosocial behaviour our present study shows that there is no significant relation between them. Persons with the ability to distinguish between right and wrong may not extend a helping hand for others. It may be because of the ethical reasons which are controlled by the socially desirable behaviour which opposes them to take such decisions.



The present investigation identifies several areas of possible exploration. Further investigation of relevant issues is likely to contribute to our understanding and application of the construct of prosocial behaviour, emotional intelligence and ethical decision making.

The findings of the present study showing the relation between emotional intelligence and ethical decision making which indicates that a person with the ability to perceive others emotions as well own emotions well can be a good ethical decision but not necessarily good in showing prosocial behaviour.

## LIMITATIONS OF THE PRESENT STUDY

The present study has considered young adults at random. No specific attention has given to their personality, family environment, and socio-cultural background. These variables can be systematically studied to generalize the findings.

The present study has certain limitations due to the time constraints and smaller sample size. Further research is needed to make any generalized conclusion.

The prosocial behaviour largely depends on emotional intelligence and ethical decision making in the present study the home environment with relation to rural and urban area and educational background of the students were not controlled had this demographic variables been controlled, different results might have been obtained.

## SUGGESTIONS FOR FUTURE RESEARCH

Future studies should take care of the limitations of the present study pointed out earlier. The family environment with relation to the rural and urban area and academic achievement of the students should be studied, whether their stay in rural and urban area can influence the prosocial behaviour. Similar question may be raised as to whether academic achievement can influence the prosocial behaviour of the students.

Future research should study the relation between emotional intelligence, ethical decision making and prosocial behaviour beyond the age group of 20 to 22.

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# Bamboo as Medicine

Dr. Amit Kumar Prakash\*

Bamboo is best known for its hard stems (*culms*) that are used in place of wood for a variety of applications, including furniture, scaffolding, flutes, fence posts, flooring, and even bicycle frames. Bamboos also serve as decorative plants, the source of tender shoots used in Chinese cuisine, and a primary subject of many Chinese artworks. Early Chinese books were written on bamboo slats and bamboo has been used as a source of medicine since ancient times.

Bamboo, a type of grass, is the fastest growing plant in the world. Some varieties grow at a peak rate of 5 cm (**2 inches**) per hour; more typical rates are 10 cm per day. Thanks to the strong stems, bamboo can tower several meters; the tallest reaching about 20 meters (over 60 feet). According to recent estimates, there are 36 bamboo forests still present in China despite intensive harvesting for centuries; they cover 4-7 million hectares (**11-19 million acres**) making up 3-5% of China's forests. China has an estimated 300 species of bamboos in 39 genera. India is second to China in bamboo harvest; it has larger bamboo forests, making up nearly 13% of the country's forest area. The annual global bamboo harvest is 10 million tons, and growing.



Fig- Bamboo scaffolding



Fig-The Chinese character  
zhu



Fig- Black bamboo

The plant is known in China as zhu; the Chinese character (**above**), which has been simplified from the ancient version, essentially shows two stalks of the bamboo plant topped with leaves. The shaved young shoots, the resin (**both fluid and dried**), and the leaves are all of medicinal value, with slightly differing applications. In general, bamboo is considered cooling, calming, and phlegm resolving. Although many species of bamboo are used as a source of medicinal products, the main ones are *Phyllostachys nigra*, the black bamboo (**above**), which grows abundantly along the Yangzi River, and *Bambusa breiflora*, *Bambusa tuldoidea*, and *Bambusa textilis* (**shown below; it is a frequent source of the resinous product called tianzhuhuang**). The leaves most frequently used in Chinese herbal medicine are collected from another plant, *Lophatherum gracile*, the grass bamboo,

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one of the smallest of the bamboo-like plants. The medicinal products are described in the table. The liquid resin, *zhuli*, is usually not available outside of China, so the dried sap (*Tianzhuhuang*) or the shaved stem (*zhuru*) are used as substitutes.

### Bamboo Commonly Used in Chinese Medicine

Chinese and English Names	Material Collected	Properties
<i>Zhuru</i> ; bamboo shavings; bamboo	The outer surface of bamboo rod is shaved off; the middle layer of the rod is then shaved into long, thin slices that are used. It has a white-greenish appearance.	sweet, slightly cold, clears heat and resolves phlegm; used in acute fevers, convulsions, bleeding due to heat, vomiting
<i>Tianzhuhuang</i> ; tabasheer (or tabashir); bamboo sap	This is the secreted, dried sap from the joints and from surface injuries (caused by parasitic wasps). It has a yellowish appearance. Pieces of this material are found in the hollow area, resting at the joints; shaking the plant reveals their presence as they knock against the side.	sweet, cold, clears heat, resolves phlegm, anti-convulsive; used in convulsion, fever, or loss of consciousness associated with phlegm-heat; especially used in remedies for children's feverish disorders and epilepsy
<i>Zhuli</i> ; bamboo sap (liquid)	Fresh cut bamboo with outer surface removed (as for making <i>zhuru</i> ) is cut (but not shaved) and heated to release the sap from the ends of the pieces. The sap has a light yellow color.	sweet, cold, clears heat, resolves phlegm; used in acute feverish disease, cough due to lung heat with profuse expectoration, loss of consciousness
<i>Danzhuye</i> ; bamboo leaves, lophatherum	The leaves and stem of a small bamboo-like plant, <i>Lophatherum gracile</i> , are collected and dried. In Japan, the leaves of the black bamboo are used similarly. The leaves of <i>Pleioblastus</i>	sweet, cold, clears heat; used in treating fever, fidgeting, urinary retention with blood in the urine slightly bitter, pungent,
<i>Kuzhuye</i> ; bitter bamboo leaves	<i>amarus</i> , a tall bamboo growing in Southern China, are collected and dried.	sweet, cold, clears heat; used in treating fever, fidgeting, and lung inflammation

All the bamboo materials have a mild sweet taste and all parts but the leaves are used to resolve phlegm. While the phlegm disorder to be addressed may be related to lung heat causing coughing and sticky phlegm, bamboo is especially used for the disorder of hot phlegm that coats or obstructs the "orifices of the heart," affecting the brain functions. Thus, it is used for epilepsy, fainting and loss of consciousness in feverish diseases, and a variety of mental disorders that develop with aging. Lophatherum (bamboo leaf) and bamboo shavings are commonly used in cases of stomach heat, providing a cooling effect and helping counter the perverse flow of qi (upward flow instead of the normal downward flow).



Fig-*Bambusa textilis* (weaver's bamboo), a frequent source of tianzhuhuang

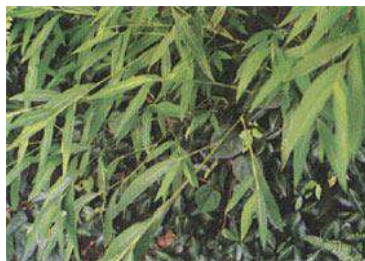


Fig- *Lophatherum* (grass bamboo), a usual source of "bamboo leaf" in China

Tabasheer is one of the main substances from bamboo used in Ayurvedic and Tibetan medicine; it is often called bamboo-manna or bamboo silica (**because it is rich in silica**). Its properties include: stimulant, astringent, febrifuge, tonic, antispasmodic, and aphrodisiac. A major source in India is *Bambusa arundinacea*, though other species of *Bambusa* are also used. An Ayurvedic remedy, Sitopaladi Churna, was used traditionally for tuberculosis and other wasting diseases and has been adopted as a popular remedy for common cold, sore throat, sinus congestion, and cough. It is a powder (= **churna**) made with tabasheer as the main ingredient, plus small amounts of long pepper, cardamom, and cinnamon in a base of sugar. In Tibet, formulas with tabasheer as the main ingredient are used for treating lung diseases.

## ACTIVE CONSTITUENTS

A number of studies of bamboo have yielded information about the chemical constituents, but no systematic evaluation has been carried out, so it is difficult to determine which of the identified compounds might be among the primary active constituents. It has been noted that the bamboo plant has unusually high levels of acetylcholine (**which acts as a neurotransmitter in animals and humans; its role in plants is as yet unknown**), especially in some portions of the plant (e.g., **upper part of the bamboo shoot**). It is conceivable that compounds of similar chemical structure in bamboo may contribute to the effects of the herb and its extracts on brain function. The bamboo leaves, obtained from the common tall bamboos (**species of *Phyllostachys*, rather than the small *Lophatherum***) have recently been utilized as a source of flavonoids (e.g., **vitexin and orientin**), used as antioxidants. The flavonoids may reduce inflammation, promote circulation, and inhibit allergy reactions. A juice made from the leaves has been made into a bamboo flavored beer.

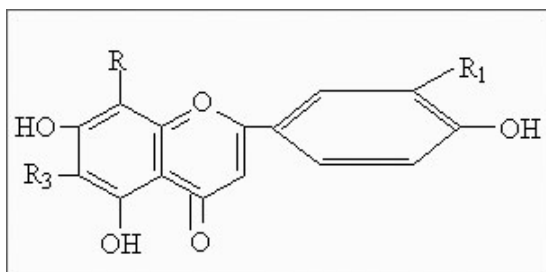


Fig- Chemical structure of acetylcholine.

## BAMBOO IN TRADITIONAL FORMULAS

The following four tables present examples of traditional formulas that have incorporated bamboo (3, 4). The formulas have been divided as follows:

- 1. Bamboo leaf formulas for febrile conditions-** Generally, these formulas were designed to treat an acute feverish disease that did not resolve in a few days, and sometimes caused a drying of the fluids (**particularly of the stomach**) as well as affecting the other internal organs. Typical symptoms are fever, irritability, and insomnia. The formula *Zhuye Shigao Tang* (**Bamboo Leaf and Gypsum Combination**) has been adopted in modern treatment of some chronic ailments, including diabetes.
- 2. Bamboo shavings formulas for up flowing qi from the stomach-** These are formulas that are used for stomach heat syndromes that produce incorrect flow of qi, commonly causing nausea and loss of appetite, as well as symptoms of hiccups or vomiting (**for acute and chronic cases**). The formulas *Jupi Zhuru Tang* (**Aurantium and Bamboo Combination**) and *Wendan Tang* (**Bamboo and Hoelen Combination**) are widely used for these symptoms; the latter formula also addresses irritability and insomnia.
- 3. Bamboo shavings and tabasheer formulas for phlegm mist affecting the brain-** These formulas clear heat and resolve phlegm to treat a syndrome in which “**phlegm mist obstructs the orifices of the heart**” (*Tanmi xinqiao*) or, in cases where there is significant heat present, phlegm fire disturbing the heart (*Tanhuo raoxin*). Symptoms may include severe agitation and insomnia, or convulsions (**epilepsy, spasms, etc.**), mania (emotional outbursts, incoherent speech), and even coma. The tabasheer formulas typically include many animal and mineral agents to make a highly potent (**and toxic**) treatment that can be given in very small amounts for only a few days; these were designed for treatment of infants. *Ditan Tang* (**Phlegm-Scouring Decoction**) and *Zhuru Wendan Tang* (**Bamboo and Ginseng Combination**) are non-toxic formulations with bamboo shavings that are still used today in the treatment of epilepsy (**or other convulsive disorders**) and mental illnesses (**including those of children**); these formulas can be used for prolonged treatment, if necessary.
- 4. Bamboo shavings and bamboo sap formulas for cough with excess sputum-** Although bamboo is used in formulas for lung heat, especially when there is excessive sputum (**often quite sticky in nature**), it is not a common ingredient, since other herbs have very similar applications, particularly fritillaria, with which it is often combined. Both formulas listed are still in common use, primarily through Japanese and Taiwanese interest in them.

### 1. Bamboo Leaf Formulas for Febrile Conditions

Chinese and English Names	Ingredients	Indications
<i>Zhuye Shigao Tang</i> Bamboo and Gypsum Combination	bamboo leaf, gypsum, pinellia, ophiopogon, ginseng, licorice, oryza	Febrile disease with interior heat and dryness, irritability and insomnia; the formula replenishes fluid and settles uprising qi.
<i>Qingying Tang</i> (Rhino horn and Scrophularia Combination)	bamboo leaf, ophiopogon, raw rehmannia, scrophularia, rhino horn, salvia, coptis, Ionicera, forsythia	Febrile disease with heat in the “ying” system, showing fever, irritability, insomnia, delirium, thirst.

<i>Qinggong Tang</i>	bamboo leaf, ophiopogon, scrophularia, rhino horn, forsythia, lotus plumule	Febrile disease with dryness, penetrating to the pericardium, with delirium or coma.
<i>Qingluo Yin</i>	bamboo leaf, lotus leaf, luffa, mirabilitum, dolichos flower, Ionicera	Febrile disease of summer-heat type with light-headedness, blurry vision, or headache.

## 2. Bamboo Shavings Formulas for Upflowing Qi from the Stomach

Chinese and English Names	Ingredients	Indications
<i>Han Jiang Tang</i>	bamboo, hematite, pinellia, trichosanthes fruit, red peony, arctium, licorice	Stomach heat and upflowing qi with bleeding.
<i>Jupi Zhuru Tang</i> Aurantium and Bamboo Combination	bamboo, citrus, baked licorice, fresh ginger, ginseng, jujube	Upflowing qi due to stomach heat, causing hiccups and retching.
<i>Jisheng Jupi Zhuru Tang</i> Aurantium and Bamboo Combination	bamboo, citrus, ophiopogon, pinellia, ginseng, baked licorice, red hoelen, eriobotrya	Upflowing qi due to stomach heat with dryness, causing vomiting and poor appetite.
<i>Xinzhi Jupi Zhuru Tang</i>	bamboo, citrus, kaki	Upflowing qi due to stomach heat causing hiccough. Upflowing qi and phlegm-
<i>Wendan Tang</i> Bamboo and Hoelen Combination	bamboo leaf, citrus, pinellia, chih-shih, licorice, hoelen	heat due to disharmony of the stomach and gallbladder, with symptoms of nausea, vomiting, restlessness, and insomnia.

## 3. Bamboo Shavings and Tabasheer Formulas for Phlegm Mist Affecting the Brain

Chinese and English Names	Ingredients	Indications
<i>Ditan Tang</i>	bamboo, pinellia, arisaema, citrus, chih-shih, hoelen, ginseng, acorus, licorice	Phlegm mist obstructing the orifices, producing mental confusion or stroke.
<i>Qinghuo Ditan Tang</i>	bamboo, arisaema, citrus, hoelen, salvia, silkworm, chrysanthemum, apricot seed, ophiopogon, biota, fritillaria, ginger	For phlegm mist obstructing the orifices yielding symptoms of insomnia, restlessness, and blurred vision.

Chinese and English Names	Ingredients	Indications
<i>Zhuru Wendan Tang</i> Bamboo and	bamboo, platycodon, pinellia, chih-shih, citrus, ginger,	For phlegm mist obstructing the orifices and the chest, yielding symptoms of
Ginseng Combination	bupleurum, ginseng, cyperus, hoelen, licorice, coptis	insomnia, restlessness, and copious sputum.
<i>Chenjin Wan</i>	tabasheer, arisaema, musk, gallstone, realgar, borax, croton seed	For phlegm mist obstructing the orifices with fever, yielding symptoms of convulsion, irritability, and restlessness.
<i>Niu Huang Zijin Wan</i>	tabasheer, arisaema, musk, gallstone, cinnabar, gastrodia, scorpion, silkworm, moutan, etc.	For phlegm mist obstructing the orifices with fever, yielding symptoms of convulsion, irritability, and restlessness.
<i>Xiaoer Qizhen Dan</i>	tabasheer, arisaema, cinnabar, realgar, scorpion, croton seed	For phlegm mist obstructing the orifices and lung heat, yielding symptoms of convulsion, shortness of breath, wheezing, coughing.
<i>Jingfeng Baolong Wan</i>	tabasheer, arisaema, gallstone, cinnabar, gastrodia, scorpion, silkworm, typhonium, etc.	For phlegm mist obstructing the orifices with fever, yielding symptoms of convulsion, skin rash, and nasal congestion.
<i>Xiaoer Taiji Wan</i>	tabasheer, arisaema, silkworm, musk, borneol, rhubarb	For phlegm mist obstructing the orifices and retention of food, yielding symptoms of convulsion, abdominal distention, and cough.

#### 4. Bamboo Shavings and Bamboo Sap Formulas for Cough with Excess Sputum

Chinese and English Names	Ingredients	Indications
<i>Gualou Zhishi Tang</i> Trichosanthes and Chih-shih Combination	bamboo sap, fritillaria, platycodon, trichosanthes seed, chih-shih, citrus, saussurea, licorice, scute, gardenia, etc.	Lung heat with thick phlegm that is difficult to expectorate.
<i>Qingfei Tang</i> Platycodon and Fritillaria Combination	bamboo, fritillaria, platycodon, morus, ophiopogon, citrus, apricot seed, licorice, scute, gardenia, etc.	Lung heat with difficult expectoration and severe coughing.



## APPENDIX 1: DIFFERENTIATING BAMBOO MATERIALS USED IN CHINESE MEDICINE

In her book **Chinese Herbal Medicines: Comparisons and Characteristics (5)**, Yang Yifang presents *tianzhuhuang* (**dried sap**), *zhuli* (**liquid sap**), and *zhuru* (**bamboo shavings**) in one section, while placing bamboo leaves in a separate section (**differentiating two types**), as follows:

*Tianzhuhuang*, *zhuli*, and *zhuru* are sweet and cold, and have the functions of clearing heat and transforming phlegm. However, the three enter different meridians and their strengths are different also, so their clinical applications are different.

*Tianzhuhuang* enters the heart and liver meridians and it is effective for dislodging phlegm, clearing heat, cooling the heart, and controlling convulsions. It is often used in children when there is high fever, irritability, convulsions, and night crying caused by disturbance of the heart and liver by phlegm-heat. It can also be used to treat fever, shortness of breath, and cough and thick sputum in conditions of phlegm-heat in the lung. In clinical practice, it is used for convulsions in infectious diseases, and for pneumonia, acute bronchitis, and influenza.

*Zhuli* is the coldest of these three herbs. It enters the heart, lung, and stomach meridians. It has a lubricating nature and its function is characterized as strongly eliminating phlegm-heat, especially when phlegm blocks the meridians and collaterals; therefore, it is used to treat epilepsy, hemiplegia, facial paralysis, and numbness and tingling or cramp of the limbs. It is able to open the heart orifice too, and is used when phlegm-heat covers the heart. In this situation, patients lose consciousness, and have gurgling sounds in the throat, such as occurs with epilepsy, stroke, and heart attack. *Zhuli* is also often used for treating mental disorders when phlegm-heat covers or disturbs the mind, such as in schizophrenia.

*Zhuru* is slightly cold and enters the lung, stomach, and gallbladder meridians. Besides clearing heat and transforming phlegm, it is effective for dispersing constrained qi, eliminating irritability, and calming the mind. It is mainly used for treating restlessness, palpitations, restless sleep, depression, and difficulty concentrating, especially after febrile disease or in chronic disease. It is also effective for soothing the stomach qi, clearing stomach heat, and treating nausea and vomiting, for example in morning sickness of early pregnancy, heatstroke, migraine, and Meniere's disease.

*Zhuye* can be divided into two kinds: the bitter form and the bland form. The bitter form is called *kuzhuye*. It is pungent, sweet, slightly bitter, and cold, and enters the heart and lung meridians. Pungency may disperse heat; bitterness and cold may clear heat. *Kuzhuye* is very effective in reducing heat in the chest and eliminating irritability. It is often used to treat febrile diseases when there is heat in the heart, lung, or chest. The bland form is called *danzhuye*. It is less strong in clearing heat than the bitter form, but is good at promoting urination, thereby leaching out the heat from the heart and the small intestine. In clinical practice, it is used to treat urinary dysfunction which starts or worsens in stressful situations. It is also used to treat eczema due to damp heat.

Dr. Jiao Shude (6) also presents some differentiation of the bamboo materials. He indicates the great value of *zhuli* (**liquid sap**) in treating stroke, epilepsy (**and other "fright-wind" disorders in children**), and coma. He notes that because of its cold nature it is best to combine it with several drops of ginger juice. He points out that the addition of ginger juice to bamboo sap "**increases its ability to move through the channels and network vessels, move through the limbs, and to expel phlegm from outside the membrane within the skin [pili mowai]. The added ginger juice also prevents the stomach from being damaged by too much cold.**" The membrane he refers to is considered to be the body structure that is below the skin and encasing the organs, along the lines of the pericardium as viewed in Chinese medicine.

He points out that *tianzhuhuang* is often used in formulas in place of *zhuli* because of its lack of availability in the West, and that *tianzhuhuang* and *zhuli* **“both clear heat and phlegm from the heart, but the former tends to be drying, whereas the latter has a lubricating disinhibiting nature.”** One might, therefore, use *tianzhuhuang* along with a lubricating herb such as ophiopogon or fritillaria to avoid the drying effect. *Tianzhuhuang*, he indicates, **“has a special ability to clear heat and phlegm from the heart channel, open the orifices, and arouse the spirit, sweep phlegm, and stabilize fright.”** Jiao compares bamboo leaves with bamboo shavings as follows: *Danzhuye* clears upper burner heat and vexation, cools the heart, and disinhibits water; *zhuru* clears center burner heat and vexation, harmonizes the stomach, and checks vomiting.

In describing *zhuye* (bamboo leaf), the editor of the book suggests that the leaf of the black bamboo and of the grass bamboo are often confused both in China and the West. He notes that:

**“The strength of the black bamboo leaf is in clearing heart heat and engendering liquid, especially for contraction of heat patterns; lophatherum is most often used to clear heat and disinhibit urine in the treatment of urinary obstruction or mouth sores; it conducts heart heat out through the urine.”**

## APPENDIX 2: BAMBOO VINEGAR

When bamboo is heated at very high temperature in an airless vessel, it becomes charcoal, which is used like other charcoal products, as a fuel component, a deodorizer, or an absorbent. The vapor that comes off the heated bamboo can be condensed to produce a liquid known as bamboo vinegar. It gets this name from the high content of acetic acid (the main component of ordinary fermented vinegar), though this ingredient is accompanied by many other compounds, especially phenols, such as guaiacol and cresol. Bamboo vinegar has been produced in Japan (where it is called *chikusaku-eki*) for many years and is used medicinally to treat eczema, atopic dermatitis, and other skin diseases; it is most commonly applied by adding to bath water. Bamboo vinegar is recognized as an anti-inflammatory and anti-fungal. It has recently been popularized as a main ingredient (**along with the mineral tourmaline**) in **“sap sheets” applied to the feet to “draw out toxins.”** Since it is produced along with charcoal, a concern was raised about carcinogenic compounds, but it was found to be safe in initial screening and laboratory tests designed to detect such problems (7).

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# भारत छोड़ो आन्दोलन और बिहार

ममता\*

1 अप्रैल, 1933 को मोहम्मद युनुस ने अपने नेतृत्व में प्रथम भारतीय मन्त्रिमण्डल बिहार में स्थापित किया गया। इसके सदस्य बहाव अली, कुमार अजीत प्रताप सिंह और गुरु सहाय लाल थे। युनुस मन्त्रिमण्डल के गठन के दिन जयप्रकाश नारायणए बसावन सिंह, रामवृक्ष बेनीपुरी ने इसके विरुद्ध प्रदर्शन किया। फलतः गवर्नर ने वैधानिक कार्यों में गवर्नर हस्तक्षेप नहीं करेगी का आश्वासन दिया।

1 जुलाई, 1937 को कांग्रेस कार्यकारिणी ने सरकारों के गठन का फैसला लिया। मोहम्मद यूनुस के अन्तरिम सरकार के त्यागपत्र के बाद 20 जुलाई, 1936 को श्रीकृष्ण सिंह ने अपने मन्त्रिमण्डल का संगठन किया लेकिन 15 जनवरी, 1938 में राजनीतिक कैंदियों की रिहाई के मुद्दे पर अपने मन्त्रिमण्डल को भंग कर दिया। 19 मार्च 1938 को द्वितीय विश्व युद्ध में बिना ऐलान के भारतीयों को शामिल किया गया, जिसका पूरे देश भर में इसके विरुद्ध प्रदर्शन हुआ 27 जून, 1937 में लिलियथगो ने आश्वासन दिया कि भारतीय मन्त्रियों के वैधानिक कार्यों में हस्तक्षेप नहीं करेगा।

## आजाद दस्ता

यह भारत छोड़ो आन्दोलन के बाद क्रान्तिकारी द्वारा प्रथम गुप्त गतिविधियाँ थीं। जयप्रकाश नारायण ने इसकी स्थापना नेपाल की तराई के जंगलों में रहकर की थी। इसके सदस्यों को छापामार युद्ध एवं विदेशी शासन को अस्त-व्यस्त एवं पंगु करने का प्रशिक्षण दिया जाने लगा।

बिहार प्रान्तीय आजाद दस्ते का नेतृत्व सूरज नारायण सिंह के अधीन था। परन्तु भारत सरकार के दबाव में मई, 1943 में जय प्रकाश नारायण, डॉ. लोहिया, रामवृक्ष बेनीपुरी, बाबू श्यामनन्दन, कार्तिक प्रसाद कि इत्यादि नेताओं को गिरफ्तार कर लिया और हनुमान नगर जेल में डाल दिया गया। आजाद दस्ता के निर्देशक सरदार नित्यानन्द सिंह थे। मार्च, 1943 में राजविलास (नेपाल) में प्रथम गुरिल्ला प्रशिक्षण केन्द्र की स्थापना की गई।

## सियाराम दल

बिहार में गुप्त क्रान्तिकारी आन्दोलन का नेतृत्व सियारा दल ने स्थापित किया था। इसके क्रान्तिकारी उल के कार्यक्रम की चार बातें मुख्य थीं— धन संचय, शस्त्र संचय, शस्त्र चलाने का प्रशिक्षण तथा सरकार का प्रतिरोध करने के लिए जनसंगठन बनाना। सियाराम दल का प्रभाव भागलपुर, मुंगेर, किशनगंज, बलिया, सुल्तानगंज, आदि जिलों में था। सियाराम सिंह सुल्तानगंज के तिलकपुर गांव के निवासी थे। क्रान्तिकारी आन्दोलन में हिंसा और पुलिस दमन के अनगिनत उदाहरण मिलते हैं।

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\*शोध छात्रा ललित नारायण मिथिला विश्वविद्यालय कामेश्वर नगर, दरभंगा (बिहार)

## तारापुर गोलीकांड

मुंगेर जिले के तारापुर थाना में तिरंगा फहराते हुए 60 क्रांतिकारी शहीद हुए थे। 15 फरवरी, 1932 की दोपहर सैकड़ों आजादी के दीवाने मुंगेर जिला के तारापुर थाने पर तिरंगा लहराने निकल पड़े। उन अमर सेनानियों ने हाथों में राष्ट्रीय झंडा और होठों पर वंदे मारतम, भारत माता की जय नारों की गूंज लिए हँसते-हँसते गोलियाँ खाई थी। भारतीय स्तत्रता संग्राम के सबसे बड़े गोलीकांड में देशभक्त पहले से लाठी-गोली खाने को तैयार हो कर घर से निकले थे। 50 से अधिक सपूतों की शहादत के बाद स्थानीय थाना भवन पर तिरंगा लहराया। आजादी मिलने के बाद से हर साल 15 फरवरी को स्थानीय जागरूक नागरिकों के द्वारा तारापुर दिवस मनाया जाता है। जालियावाला बाग से भी बड़ी घटना थी। तारापुर गोलीकांड। सैकड़ों लोगों ने धावक दल को अंग्रेजों के थाने पर झंडा फहराने का जिम्मा दिया था। और उनका मनोबल बढ़ाने के लिए जनता खड़ी होकर **भारत माता की जय, वंदे मातरम्** आदि का जयघोष कर रहे थे। भारत माँ के वीर बेटों के ऊपर अंग्रेजों के कलक्टर ई. ओली एवं एस. पी. डब्ल्यू. फ्लैग के नेतृत्व में गोलियाँ दागी गयी थी। गोली चल रही थी लेकिन को भाग नहीं रहा था। लोग डटे हुए थे। इस गोलीकांड के बाद कांग्रेस ने प्रस्ताव पारित कर हर साल देश में 15 फरवरी को तारापुर दिवस मनाने का निर्णय लिया था। घटना के बाद अंग्रेजो ने शहीदों का शव वाहनों में लाद कर सुलतानगंज की गंगा नदी में बहा दिया था। शहीद सपूतों में से केवल 13 की ही पहचान हो पाई थी। ज्ञात शहीदों में विश्वनाथ सिंह (छत्रहार), महिपाल सिंह (रामचुआ), शीतल (असरगंज), सुकुल सोनार (तारापुर), संता पासी (तारापुर), झोंटी झा (सतखरिया), सिंहेश्वर राजहंस (बिहमा), बदरी मंडल (धनपुरा), वसंत धानुक (लौढिया), रामेश्वर मंडल (पड़भाड़ा), गैबी सिंह (महेशपुर), अशफ़ी मंडल (कष्टीकरी) तथा चंडी महतो (चौरगांव) थे। 31 अज्ञात शव भी मिले थे, जिनकी पहचान नहीं हो पायी थी। और कुछ शव तो गंगा की गोद में समा गए थे।

इलाके के बुजुर्गों के अनुसार शंभुगंज थाना के खौजरी पहाड़ में तारापुर थाना पर झंडा फहराने की योजना बनी थी। खौजरी पहाड़, मंदार, बाराहाट और ढोलपहाड़ी तो जैसे क्रांतिकारियों की सुरक्षा के लिए ही बने थे। प्रसिद्ध क्रांतिकारी सियाराम-ब्रह्मचारी दल भी इन्हीं पहाड़ों में बैठकर आजादी के सपने देखा करते थे। थाना विहपुर से लेकर गंगा के इस पार बांका – देवघर के जंगलों – पहाड़ों तक क्रांतिकारियों का असर बहुत अधिक हुआ करता था। मातृभूमि की रक्षा के लिए जान लेने वाले और जान देने वाले दोनों तरह के सेनानियों ने अंग्रेज सरकार की नाक में दम कर रखा था। इतिहासकार **डी. सी. डीन्कर** ने अपनी किताब **“स्वतंत्रता संग्राम में अछूतों का योगदान”** में भी तारापुर की इस घटना का जिक्र करते हुए विशेष रूप से संता पासी के योगदान का उल्लेख किया है। पंडित नेहरू ने भी 1942 में तारापुर की एक यात्रा पर 34 शहीदों के बलिदान करते हुए कहा था. *"The faces of the dead freedom fighters were blackened in front of the resident of Tarapur."*

11 अगस्त, 1942 को सचिलवालय गोलीकाण्ड बिहार के इतिहास वरन् भारतीय स्वतन्त्रता आन्दोलन का एक अविस्मरणीय दिन था। पटना के जिलाधिकारी डब्ल्यू. जी. आर्थर के आदेश पर पुलिस ने गोलियाँ चलाने का आदेश दे दिया। पुलिस ने 13 या 14 राउण्ड गोलियाँ, इस गोलीकाण्ड मे सात छात्र शहीद हुए,

लगभग 25 गम्भीर रूप से घायल हुए। 11 अगस्त, 1942 के सचिवालय गोलीकाण्ड ने बिहार में आन्दोलन को उग्र कर दिया।

### सचिवालय गोलीकाण्ड में शहीद सात महान बिहारी सपूत

1. **उमाकान्त प्रसाद सिंह-** राम मोहन राय सेमीनरी स्कूल के 12वीं कक्षा का छात्र था। इसके पिता राजकुमार सिंह थे। वह सारण जिले के नरेन्द्रपुर ग्राम का निवासी था।

2. **रामानन्द सिंह-** ये राम मोहन राय सेमीनरी स्कूल पटना के 11वीं कक्षा का छात्र था। इनका जन्म पटना जिले के ग्राम शहादत नगर में हुआ था। इनके पिता लक्ष्मण सिंह थे।

3. **सतीश प्रसाद झा-** सतीश प्रसाद का जन्म भागलपुर जिले के खडहरा में हुआ था। इनके पिता जगदीश प्रसाद झा थे। वह पटना कालेजियत स्कूल का 11वीं कक्षा का छात्र था। सीवान थाना में फुलेना प्रसाद श्रीवास्तव द्वारा राष्ट्रीय झण्डा लहराने की कोशिश में पुलिस गोली का शिकार हुए।

4. **जगपति कुमार-** इस महान सपूत का जन्म गया जिले के खराठी गाँव में हुआ था।

5. **देवीपद चौधरी-** इस महान सपूत का जन्म सिलहर जिले के अन्तर्गत जमालपुर गाँव में हुआ था। वे मीलर हाईस्कूल के 9वीं कक्षा का छात्र था।

6. **राजेन्द्र सिंह-** इस महान सपूत का जन्म सारण जिले के बनवारी चक ग्राम में हुआ था। वह पटना हाईस्कूल के 11वीं का छात्र था।

7. **राय गोविन्द सिंह-** इस महान सपूत का जन्म पटना जिले के दशरथ ग्राम में हुआ। वह पुनपुन हाईस्कूल का 11वीं का छात्र था।

स्वतन्त्रता प्राप्ति के बाद इस स्थान पर शहीद स्मारक का निर्माण हुआ। इसका शिलान्यास स्वतन्त्रता दिवस को बिहार के प्रथम राज्यपाल जयराम दौलत राय के हाथों हुआ। औपचारिक अनावरण देश के प्रथम राष्ट्रपति डॉ. राजेन्द्र प्रसाद ने 1956 ई. में किया। भारत छोड़ो आन्दोलन के क्रम में बिहार में 15,000 से अधिक व्यक्ति बन्दी बनाये गये, 8, 783 को सजा मिली एवं 134 व्यक्ति मारे गये।

बिहार में भारत छोड़ो आन्दोलन को सरकार द्वारा बलपूर्वक दबाने का प्रयास किया गया जिसका परिणाम यह हुआ कि क्रान्तिकारी को गुप्त रूप से आन्दोलन चलाने पर बाध्य होना पड़ा।

9 नवम्बर, 1942 दीवाली की रात में जयप्रकाश नारायण, रामनन्दन मिश्र, योगेन्द्र शुक्ला, सूरज नारायण सिंह इत्यादि व्यक्ति हजारीबाग जेल की दीवार फाँदकर भाग गये। सभी शैक्षिक संस्थान हड़ताल पर चली गईं और राष्ट्रीय झण्डे लहराये गये। 11 अगस्त को विद्यार्थियों को एक जुलूस ने सचिवालय भवन के सामने विधायिका की इमारत पर राष्ट्रीय झण्डा लहराने की कोशिश की।

द्वितीय विश्व युद्ध की प्रगति और उससे उत्पन्न गम्भीर परिस्थितियों को देखते हुए कांग्रेस ने ब्रिटिश सरकार को सहायता व सहयोग दिया। अगस्त प्रस्ताव और क्रिप्स प्रस्ताव में दोष होने के कारण कांग्रेस ने इसे इस्वीकार कर दिया था।

दिसम्बर, 1941 में जापनी आक्रमण से अंग्रेज भयभीत हो गये थे। मार्च, 1942 में ब्रिटिश प्रधानमंत्री विन्सटन चर्चिल ने ब्रिटिश संसद में घोषणा की कि युद्ध की समाप्ति के बाद भारत को औपनिवेशिक स्वराज्य

प्रदान किया जायेगा। 22 मार्च, 1942 को स्टेफोर्ड किप्स ने इस व्यवस्था में लाया। फलतः उनके प्रस्ताव राष्ट्रवादियों के लिए असन्तोषजनक सिद्ध हुए। 30 जनवरी, 1942 से 15 फरवरी, 1942 तक पटना में रहकर मौलाना अब्दुल कलाम आजाद में सार्वजनिक सभा को सम्बोधित किया।

14 जुलाई, 1942 को वर्धा में कांग्रेस कार्यसमिति की बैठक का आयोजन किया गया। इसी समय सुप्रसिद्ध भारत छोड़ो प्रस्ताव स्वीकृत हुआ और उसे अखिल भारतीय कांग्रेस कार्यसमिति को मुम्बई में होने वाली बैठक में प्रस्तुत करने का निर्णय हुआ। 7 अगस्त, 1942 को मुम्बई में कांग्रेस कार्यकारिणी की बैठक में भारत छोड़ो प्रस्ताव को स्वीकार कर लिया गया और गाँधी जी ने करो या मरो का नारा दिया साथ ही कहा हम देश को चितरंजन दास की बेड़ियों में बँधे हुए देखने को जिन्दा नहीं रहेंगे। 8 अगस्त को भारत छोड़ो प्रस्ताव पारित होने के तुरन्त बाद कांग्रेस के अधिकतर नेता गिरफ्तार कर लिये गये। डॉ. राजेन्द्र प्रसाद को गिरफ्तार कर लिया गया। इसके बाद में मथुरा बाबू, श्रीकृष्ण सिंह, अनुग्रह बाबू इत्यादि भी गिरफ्तार कर लिये गये। बलदेव सहाय ने सहकारी नीति के विरोध में महाधिवक्ता पर से इस्तीफा दे दिया। 1 अगस्त अध्यादेश द्वारा कांग्रेस को गैर-कानूनी घोषित कर दिया। इसके फलस्वरूप गवर्नर ने इण्डिपेंडेंट पार्टी के सदस्य मोहम्मद युनूस को सरकार बनाने के लिए आमन्त्रण किया। मोहम्मद युनूस बिहार के भारतीय प्रधानमंत्री बने। *(तत्कालीन समय में प्रान्त के प्रधान को प्रधानमंत्री कहा जात था।)*

### भारत सरकार अधिनियम, 1935 एवं बिहार में प्रथम कांग्रेस का मन्त्रिमण्डल

ब्रिटिश संसद द्वारा 1935 ई. में भारत के शासन के लिए एक शासन विधान को पारित किया गया। 1935 ई. से 1947 ई. तक इसी आधार पर भारतीय शासन होता रहा। इस विधान में एक संघीय शासन की व्यवस्था थी। कांग्रेस ने इसे अपेक्षाओं से कम माना लेकिन चुनाव में भाग लिया। 1935-36 ई. के चुनाव तैयार करने लगा। जवाहरलाल नेहरू एवं गोविन्द वल्लभ पन्त ने बिहार का दौरा कर कांग्रेसियों का जोश बढ़ाया।

कांग्रेस ने अनेक रचनात्मक कार्य उद्योग संघ, चर्खा संघ आदि चलाये। रात्रि समय में पाठशाला, ग्राम पुस्तकालय खोले गये। आटा चक्की, दुकान चलाना एवं खजूर से गुड़ बनाना आदि कार्यों का प्रशिक्षण दिया गया। बिहार में कांग्रेसी आश्रम खोलने का शीलभद्र याज्ञी का विशेष योगदान रहा। 1935 ई. का वर्ष कांग्रेस का स्वर्ण जयन्ती वर्ष था जो डॉ. श्रीकृष्ण सिंह की अध्यक्षता में धूमधाम से मनाया गया। जनवरी, 1936 ई. में छः वर्षों के प्रतिबन्धों के पश्चात् बिहार राजनीतिक सम्मेलन का 19 वाँ अधिवेशन पटना में आयोजित किया गया। 22 से 27 जनवरी के मध्य बिहार के 152 निर्वाचन मण्डल क्षेत्रों में चुनाव सम्पन्न हुए। कांग्रेस ने 107 में से 98 जीते। 17-18 मार्च को दिल्ली में कांग्रेस बैठक के बाद बिहार में कांग्रेस मन्त्रिमण्डल का गठन हुआ।

21 जून को वायसराय लिनलिथगो के वक्तव्य ने संशयों को दूर करने में सफलता पाई अन्त में युनुस को सरकार का निमन्त्रण न देकर श्रीकृष्ण सिंह के नेतृत्व मन्त्रिमण्डल का गठन किया गया, अनुग्रह नारायण किंह उप मुख्यमंत्री सह वित्त मंत्री बने। रामदयालु अध्यक्ष तथा प्रो. अब्दुल बारी विधानसभा के उपाध्यक्ष बने। इस बीच अण्डमान से लाये गये राजनीतिक कैदियों कि रिहाई के प्रश्न पर गंभीर विवाद उत्पन्न हो गया फलतः वायसराय के समर्थन इन्कान के बाद 15 जनवरी, 1938 के मन्त्रिमण्डल ने इस्तीफा दे दिया। कांग्रेस ने बाद में सुधारात्मक एवं रचनात्मक कार्यों की तरफ ध्यान देने लगा। बिहार टेनेन्सी अमेण्टमेड एक्ट के तहत

काश्तकारी व्यवस्था के अन्तर्गत किसानों को होने वाली समस्या को दूर करने का प्रयास किया। चम्पारण कृषि संशोधन कानून और छोटा नागपुर संशोधन कानून पारित किये गये। श्रमिकों में फैले असन्तोष से 1937-38 ई. में ग्यारह बार हड़तालें हुईं। अब्दुल बारी ने टाटा वर्क्स यूनियन की स्थापना की। योगेन्द्र शुक्ल,

### विदेशी वस्त्र बहिष्कार

3 जनवरी, 1928 को कलकत्ता में कांग्रेस कार्यसमिति की बैठक में विदेशी वस्त्रों के बहिष्कार करने का निर्णय किया गया। इसमें अपने स्वदेशी वस्त्र खादी वस्त्र को बढ़ावा देने के लिए माँग की गई। सार्वजनिक सभाओं एवं मैजिक लालटेन की सहायता से कार्यकर्ता के सहारे गाँव में पहुँचे।

### पूर्ण स्वाधीनता प्रस्ताव

जवाहरलाल नेहरू की अध्यक्षता में कांग्रेस का 29-31 दिसम्बर 1928 का लाहौर अधिवेशन में पूर्ण स्वाधीनता प्रस्ताव स्वीकृत किया गया। बिहार कांग्रेस कार्यसमिति की 20 जनवरी, 1930 को पटना में एक बैठक आयोजित की गई। 26 जनवरी, 1930 को सभी जगह स्वतन्त्रता दिवस मनाने को निश्चित किया और मनाया गया।

### नमक सत्याग्रह और सविनय अवज्ञा आन्दोलन

दिसम्बर, 1929 ई. में पण्डित जवाहरलाल की अध्यक्षता में लाहौर का अधिवेशन सम्पन्न हुआ था। इसके साथ ही गाँधी जी ने फरवरी, 1930 ई. में कार्यकारिणी कांग्रेस को गाँधी जी को सविनय अवज्ञा आन्दोलन करने का अधिकार दिया।

12 मार्च, 1930 को महात्मा गाँधी के नेतृत्व में सविनय अवज्ञा आन्दोलन का आरम्भ नमक कानून तोड़ने के साथ शुरू हुआ। 26 जनवरी, 1930 को बिहार में स्वाधीनता मनाने के उपरान्त 12 मार्च को गाँधी जी की झंडी यात्रा शुरू हुई थी। बिहार में नमक सत्याग्रह का प्रारम्भ 15 अप्रैल, 1930 चम्पारण एवं सारण जिलों में नमकीन मिट्टी से नमक बनाकर किया गया। पटना में 16 अप्रैल, 1930 को नरवासपिण्ड नामक स्थान दरभंगा में सत्यनारायण सिंह, मुंगेर में श्रीकृष्ण सिंह ने नमक कानून को तोड़ा।

4 मई, 1930 को गाँधी जी को गिरफ्तार कर लिया गया इसके विरोध में पूरे बिहार में विरोध प्रदर्शन किया गया। मई, 1930 ई. में बिहार प्रदेश कांग्रेस कमेटी ने विदेशी वस्त्रों और शराब की दुकानों के आगे धरने का प्रस्ताव किया। इसी आन्दोलन के क्रम में बिहार में चौकीदारी कर देना बन्द कर दिया गया। स्वदेशी वस्त्रोंकी माँग पर छपरा जिले में कैदियों ने गंगा रहने का निर्णय किया। इसे नंगी इड़ताल के नाम से जाना जाता है। 7 अप्रैल को गाँधी जी ने अपने वक्तव्य द्वारा सविनय अवज्ञा आन्दोलन स्थगित करने की सलाह दी। 18 मई, 1934 को बिहार प्रदेश कांग्रेस कमेटी ने आन्दोलन को स्थगित कर दिया।

### साइमन कमीशन वापस जाओ आन्दोलन

1926 ई. में ब्रिटिश संसद एवं भारतीय वायसराय लॉर्ड डरविन ने एक घोषणा की भारत में फैल रही नैराश्य स्थिति की समाप्ति हेतु 1928 ई. में एक कमीशन की स्थापना की घोषणा की। इस कमीशन के अध्यक्ष

सर जॉन साइमन थे, अतः इसे साइमन कमीशन कहा जाता है किन्तु इसमें कोई भी भारतीय सदस्य नहीं रखा गया था। भारतीय राष्ट्रीय कांग्रेस ने इस आयोग के बहिष्कार एवं विरोध का फैसला किया। बिहार प्रदेश कांग्रेस कार्यसमिति की पटना में सर अली इमाम की अध्यक्षता में एक बैठक हुई जिसमें साइमन कमीशन के पटना आगमन पर पूर्ण बहिष्कार किया गया।

18 दिसम्बर, 1928 को साइमन कमीशन बिहार आया। हार्डिंग पार्क (पटना) के सामने बने विशेष प्लेटफार्म के सामने 30,000 राष्ट्रवादियों ने साइमन वापस जाओ के नारे से स्वागत किया गया। साइमन कमीशन के विरोध के दौरान लखनऊ में पण्डित जवाहर लाल एवं लाहौर में लाला लाजपत राया पर लाठियाँ बरसाई गईं। लाठी की चोट से लाला लाजपत राय की मृत्यु हो गई। फलतः विद्रोह पूरे देश में फैला गया। कमीशन के विरोध में बिहार में राजेन्द्र प्रसाद ने इसकी अध्यक्षता की थी। बिहार राष्ट्रवादियों ने नारा दिया कि “जवानों सवेरा हुआ साइमन भगाने का बेरा हुआ”। विरोधी नेताओं में ब्रज किशोर जी, रामदयालु जी एवं अनुग्रह नारायण बाबू थे। इस घटना ने बिहार के लिए नई चेतना पैदा कर दी। 1929 ई. में सर्वदलीय सम्मेलन हुआ जिसमें भारत के लिए संविधान बनाने के लिए मोती लाल नेहरू की अध्यक्षता में एक समिति बनी जिसे नेहरू रिपोर्ट कहते हैं। पटना में दानापुर रोड बना राष्ट्रीय पाठशाला (अन्य) भी खुली। एक मियाँ खैरुद्दीन के मकान के छात्रों को पढ़ाना शुरू किया गया। बाद में यही जगह सदाकत आश्रम के रूप में बदल गया।

नवम्बर, 1929 ई. ब्रिटिश युवराज का भारत आगमन हुआ। इनके आगमन के विरोध करने का फैसला किया गया। इसके लिए बिहार प्रान्तीय सम्मेलन का आयोजन किया गया। जब राजकुमार 22 दिसम्बर, 1929 को पटना आये तो पूरे शहर में हड़ताल थी। 5 जनवरी 1922 को उत्तर प्रदेश के चौरा-चौरी नामक स्थान पर उग्र भीड़ ने 21 सिपाहियों को जिन्दा जला दिया तो गाँधी जी ने असहयोग आन्दोलन को स्थगित करने का निर्णय लिया। गाँधी जी को 10 मार्च, 1922 को गिरफ्तार कर 6 महीना के लिए जेल भेज दिया गया।

## बिहारन में स्वराज पार्टी

चौरा-चौरी काण्ड से दुःखी होकर गाँधी जी ने असहयोग आन्दोलन को समाप्त कर दिया फलतः देशबन्धु चितरंजन दास और मोतीलाल नेहरू और विठ्ठलभाई पटेल ने एक स्वराज दल का गठन किया।

बिहार में स्वराज दल का गठन फरवरी, 1923 ई. में हुआ। नारायण प्रसाद अध्यक्ष, अब्दुल बारी सचिव एवं कृष्ण सहाय तथा हरनन्दन सहाय को सहायक सचिव बनाया गया। मई, 1923 को नई कार्यकारिणी का गठन हुआ। 2 जून, 1923 को पटना में स्वराज दल की एक बैठक हुई जिसमें पटना, छोटा नागपुर एवं भागलपुर मण्डलों में भी स्वराज दल की शाखाओं को गठित करने की घोषणा की गई, लेकिन यह आन्दोलन ज्यादा दिनों तक नहीं चला।

## असहयोग आन्दोलन

इस आन्दोलन का प्रारूप भारतीय राष्ट्रीय कांग्रेस के कलकत्ता अधिवेशन में सितम्बर, 1920 ई. में पारित हुआ, लेकिन बिहार में इसके पूर्व ही असहयोग प्रस्ताव पारित हो चुका था। 29 अगस्त, 1918 को कांग्रेस ने



अपने मुम्बई अधिवेशन में आण्टेक्यू-चेम्सफोर्ड रिपोर्ट पर विचार किया जिसकी अध्यक्षता बिहार के प्रसिद्ध बैरिस्टर हसन इमान ने की। हसन इमान के नेतृत्व में इंग्लैण्ड में एक शिष्ट मण्डल भेजा जा रहा था, जिसमें ब्रिटिश सरकार पर दबाव बनाया जाय। रौलेट एक्ट के काले कानून के विरुद्ध गाँधी जी नपे पूरे देश में जनआन्दोलन छेड़ रखा था।

बिहार में 6 अप्रैल, 1919 को हड़ताल हुई। मुजफ्फरपुर, छपरा, गया, मुंगेर आदि स्थानों पर हड़ताल का व्यापक असर पड़ा। 11 अप्रैल, 1919 को पटना में एक जनसभा का आयोजन किया गया जिसमें गाँधी जी की गिरफ्तारी का विरोध किया गया। असहयोग आन्दोलन के क्रम में मजरुलहक, राजेन्द्र प्रसाद, अनुग्रह नारायण सिंह, ब्रजकिशोर प्रसाद, मोहम्मद शफी ओर अन्या नेताओं ने विधायिका के चुनाव से अपनी उम्मीदवारी वापस ले ली। छात्रों को वैकल्पिक शिक्षा प्रदान करने के लिए पटना-गया रोड पर एक राष्ट्रीय महाविद्यालय के ही प्रांगण में बिहार विद्यापीठ का उद्घाटन 6 फरवरी, 1921 को गाँधी जी द्वारा किया। 20 सितम्बर, 1921 से मजरुल हक ने सदाकत आश्रय से ही मदरलैण्ड नामक अखबार निकालना शुरू किया। इसका प्रमुख उद्देश्य राष्ट्रीय भावना के प्रचार-प्रसार एवं हिन्दू-मुस्लिम एकता की स्थापना करना था। इन्होंने गाँधी जी को किसानों की आर्थिक दशा की तरफ ध्यान दिलाया। ब्रजकिशोर प्रसाद ने एक प्रस्ताव प्रस्तुत किया जिससे समस्याओं का निदान किया जा सके। राजकुमार शुक्ल के अनुरोध पर गाँधी जी ने कलकत्ता से 15 अप्रैल, 1917 को पटना, मुजफ्फरपुर तथा दरभंगा होते हुए चम्पारण पहुँचे। स्थानीय प्रशासन ने उनके आगमन एवं आचरण को गैर-कानूनी घोषित कर गिरफ्तार कर लिया और मोतिहारी की जेल में भेज दिया गया लेकिन अगले दिन छोड़ दिया गया। बाद में तत्कालीन उपराज्यपाल एडवर्ड गेट ने गाँधीजी को वार्ता के लिए बुलाया और किसानों के कष्टों की जाँच के लिए एक समिति के लिए एक कमेटी का गठन किया, जिसका नाम चम्पारण एग्रेरोरियन कमेटी पड़ा गाँधी जी के कहने पर तीन कड़िया व्यवस्था का अन्त कर दिया गया।

### खिलाफता आन्दोलन

प्रथम विश्वयुद्ध की समाप्ति के बाद जब विजयी राष्ट्रों ने तुर्की सुल्तान के खलीफा पद को समाप्त कर दिया तो अंग्रेजों द्वारा कोई आश्वासन न मिलने के कारण भारतीय मुसलमानों एवं राष्ट्रवादियों का गुस्सा भड़क उठा। फलतः मौलाना मोहम्मद अली एवं शौकल अली ने खिलाफत आन्दोलन शुरू किया। यह आन्दोलन 1919-23 ई. में हुआ।

16 जनवरी, 1919 को पटना में हसन इमाम की अध्यक्षता में एक सभा का आयोजन किया गया, जिसमें खलीफा के प्रति मित्र राष्ट्रों द्वारा उचित व्यवहार करने को कहा गया। अप्रैल, 1919 ई. में पटना में शौकल अली आये और 1920 ई. तक पूरे बिहार में यह आन्दोलन फैल गया। इसके लिए उन्होंने मोतीहारी, छपरा, पटना, फुलवारी शरीफ में जनसभाओं को सम्बोधित किया।

1922 ई. में यह आन्दोलन पूर्णरूपेण समाप्त हो गया। शचिन्द्रनाथ सान्याल ने 1913 ई. में पटना में अनुशीलन समिति की शाखा की नींव रखी। ढाका अनुशीलन समिति के सदस्य रेवती नाग ने भागलपुर में और यदुनाथ सरकार ने बक्सर में युवा क्रान्तिकारियों को प्रशिक्षित किया।

## होमरूल आन्दोलन

1916 ई. में भारत में होमरूल आन्दोलन प्रारम्भ हुआ था। श्रीमती एनी बेसेन्ट ने मद्रास में एवं बाल गंगाधर तिलक ने पूना में इसकी स्थापना की थी।

बिहार में होमरूल लीग की स्थापना 16 दिसम्बर, 1916 में हुई, इसके अध्यक्ष मौलाना मजहरूल हक, उपाध्यक्ष सरफराज हुसैन खान और पूर्गेन्दू नारायण सिंह तथा मन्त्री चन्द्रवंशी सहाय और वैद्यानाथ नारायण नियुक्त किये गये। एनी बेसेन्ट भी होमरूल के आन्दोलन के सम्बन्ध में दो-तीन बार पटना भी आयीं। इनका भव्य स्वागत किया गया। वर्तमान पटना कॉलेज के सामने के सड़क का नाम एनी बेसेन्ट रोड इन्हीं के नाम रखा गया है।

## चम्पारण सत्याग्रह आन्दोलन

बिहार का चम्पारण जिला 1917 ई. में महात्मा गाँधी द्वारा भारत में सत्याग्रह के प्रयोग का पहला स्थल था। चम्पारण में अंग्रेज भूमिपतियों द्वारा किसानों पर निर्मम शोषण किया जा रहा था। जमींदारों द्वारा किसानों को बलात नील की खेती के लिए बाध्य किया जाता था। प्रत्येक बीघे पर उन्हें तीन कट्ठों में नील की खेती अनिवार्यतः करनी पड़ती थी। इन्हें तीन कठिया व्यवस्था कहा जाता था। बदले में उचित मजदूरी नहीं दी जाती थी। इसी कारण में किसानों एवं मजदूरों में भयंकर आक्रोश था। सन् 1936 में लखनऊ अधिवेशन में चम्पारण के राजकुमार शुक्ल जो स्वयं जमींदार के आर्थिक शोषण से ग्रस्त थे, भाग लिया।

26 दिसम्बर 1938 को पटना में मुस्लिम लीग का 26वाँ अधिवेशन हुआ। 29 दिसम्बर, 1938 को अखिल भारतीय मुसलमान छात्र सम्मेलन हुआ। 4 जनवरी, 1932 को राजेन्द्र प्रसाद, अनुग्रह नारायण सिंह, ब्रजकिशोर प्रसाद, कृष्ण बल्लभ सहाय आदि नेतागण को गिरफ्तार किया गया। रैम्जे मैक्डोनाल्ड द्वारा हरिजन को कोटा की व्यवस्था से अस्त-व्यस्त हो गया। 12 जुलाई, 1933 को सामुदायिक सविनय अवज्ञा के स्थान पर व्यक्तिगत सविनय अवज्ञा का प्रारूप तैयार किया गया। 1927 ई. में “**पटना युवा संघ**” की स्थापना की गई।

## नंगी हड़ताल

4 मई, 1930 को गाँधी जी की गिरफ्तारी के बाद स्वदेशी के प्रचार के एवं विदेशी वस्त्रों का बहिष्कार किया गया। छपरा के कैदियों ने वस्त्र पहनने से इंकार कर दिया। नंगे शरीर रहकर विदेशी वस्त्रों का विरोध किया गया।

## बेगूसराय गोलीकाण्ड एवं बिहार किसान आन्दोलन

26 जनवरी, 1931 को प्रथम स्वाधीनता दिवस को पूरे जोश से मनाने का निर्णय किया गया। रघुनाथ ब्रह्मचारी के नेतृत्व में बेगूसराय जिले के परहास से एक जुलूस निकाला गया। डीएसपी वशीर अहमद ने गोली चालने का आदेश दे दिया। छः व्यक्ति की घटना स्थल पर मृत्यु हो गई। टेदीनाथ मन्दिर के सामने गोलीकाण्ड हुआ था।

1919 ई. में मधुबनी जिले के किसान स्वामी विद्यानन्द ने दरभंगा राज के विरुद्ध विरोध किया। 1922-33 ई. में मुंगेर में बिहार किसान सभा का गठन मोहम्मद जूबैर और श्रीकृष्ण सिंह द्वारा किया। 1928 ई. में स्वामी सहजानन्द ने प्रान्तीय किसान सभा की स्थापना की। इसकी स्थापना में कार्यानन्द शर्मा, राहुला सांकृत्यायन, पंचानन शर्मा, यदुनन्दन शर्मा आदि वामपंथी नेताओं का सहयोग मिला।

स्वामी दयानन्द सहजानन्द ने 4 मार्च, 1928 को किसान आन्दोलन प्रारम्भ किया। इसी वर्ष सरदार वल्लभ भाई पटेल की बिहार यात्रा हुई और सपने भाषणों से किसानों को नई चेतना से जागृत किया। बाद में इस आन्दोलन को यूनाइटेड पोलीटीकल पार्टी का नाम दिया गया।

1933 ई. में किसान सभा द्वारा जाँच कमेटी का गठन किया गया। कमेटी द्वारा किसानों की उदनीय दशा के प्रति केन्द्रीय कर लगाया गया। 1936 ई. में अखिल भारतीय किसान सभा का गठन हुआ था। इसके अध्यक्ष स्वामी सहजानन्द स्वामी थे और महासचिव प्रोफेसर एन. जे. रंगा थे।

### बिहार में मजदूर आन्दोलन

बिहार में किसानों के समान मजदूरी का भी संगठन बना। बिहार में औद्योगिक मजदूर वर्ग के मजदूर आन्दोलन चलाया। 1917 ई. में बोल्शेविक क्रान्ति एवं साम्यवादी विचारों में परिवर्तन के साथ-साथ प्रचार-प्रसार हुआ। दिसम्बर, 1919 ई. में प्रथम बार जमालपुर (मुंगेर) में मजदूरों की हड़ताल प्रारम्भ हुई। 1920 ई. में एस. एन. हैदर एवं व्यायकेश चक्रवर्ती के मार्गदर्शन में जमशेदपुर वर्क्स एसोसिएशन बनाया गया। 1925 ई. और 1928 ई. के बीच मजदूर संगठन की स्थापना हुई। सुभाषचन्द्र बोस, अब्दुल बारी, जयप्रकाश नारायण इसके प्रमुख नेता थे।

### बिहार में संवैधानिक प्रगति और द्वैध शासन प्रणाली

बिहार प्रान्त का गठन 1 अप्रैल, 1912 में हुआ। इसके गठन के बाद 1919 ई. को भारत सरकार का कानून लागू किया गया। द्वैध शासन की व्यवस्था बिहार में भी 20 दिसम्बर, 1920 को प्रारम्भ हुई जिसकी अध्यक्षता आर. एन. मुधोलकर ने की। मौलाना मजरूलहक समिति के अध्यक्ष बनाये गये। 1916 ई. में पटना उच्च न्यायालय और 1917 ई. में पटना विश्वविद्यालय की स्थापना की गई। 20 जनवरी, 1913 को बिहार, उड़ीसा के लेफ्टिनेन्ट गवर्नर के नवगठित काउन्सिल की प्रथम बैठक बांकीपुर में हुई, जिसकी अध्यक्षता बिहार-उड़ीसा के लेफ्टिनेन्ट गवर्नर चार्ल्स स्टुअर्ट बेली ने की।

7 फरवरी, 1921 को बिहार एवं उड़ीसा लेजिस्लेटिव काउन्सिल की प्रथम बैठक का उद्घाटन हुआ जिसकी अध्यक्षता सर मुण्डी ने की। 1 अप्रैल, 1936 को बिहार से उड़ीसा प्रान्त अलग किया गया। पुराने गवर्नमेन्ट ऑफ इण्डिया एक्ट, 1919 के एक सदनी विधानमण्डल की जगह नया कानून के अनुसार द्वि-सदनी विधानमण्डल स्थापित किया गया।

### बिहार में क्रान्तिकारी आन्दोलन

बंग भंग विरोधी आन्दोलन से बिहार तथा बंगाल में क्रान्तिकारी आन्दोलन प्रारम्भ हो गया। बिहार के डॉ. ज्ञानेन्द्र नाथ, केदारनाथ बनर्जी एवं बाबा ठाकुर दास प्रमुख थे। बाबा ठाकुर दास ने 1906-07 ई. में

पटना में रामकृष्ण मिशन सोसायटी की स्थापना की और समाचार-पत्र के द्वारा दी मदरलैण्ड का सम्पादन एवं प्रकाशन शुरू किया। 1908 ई. में खुदीराम बोस और प्रफुल्ल चाकी नामक दो युवकों ने मुजफ्फरपुर के जिला जज डी. एच. किंग्स फोर्ड की हत्या के प्रयास में मुजफ्फरपुर के नामी वकील की पत्नी प्रिग्ल कैनेडी की बेटी की हत्या के कारण 11 अगस्त, 1908 को फाँसी दी गई। इस घटना के बाद भारत को आजाद कराने की भावना प्रबल हो उठी। खेती नाग, चुनचुन पाण्डेय, बटेश्वर पाण्डेय, घोटन सिंह, नालिन बागची आदि इस समय प्रमुख नेता थे।

1908 ई. में ही नवाब सरफराज हुसैन खाँ की अध्यक्षता में बिहार कांग्रेस कमेटी का गठन हुआ। इसमें सच्चिदानन्द सिंह, मजरूलहक हसन, इमाम दीपनारायण सिंह आदि शामिल थे। कांग्रेस कमेटी के गठन के बाद इसके अध्यक्ष इमाम हुसैन को बनाया गया।

1909 ई. में बिहार कांग्रेस सम्मेलन का दूसरा अधिवेशन भागलपुर में सम्पन्न हुआ। इसमें भी बिहार को अलग राज्य की माँग जोरदार ढंग से की गई।

1907 ई. में ही फखरुद्दीन कलकत्ता उच्च न्यायालय में न्यायाधीश नियुक्त होने वाले प्रथम बिहारी बने तथा स्थायी पारदर्शी के रूप में इमाम हुसैन को नियुक्त किया गया। 1910 ई. में मार्लेमिण्टो सुधार के अन्तर्गत प्रथम चुनाव आयोजन में सच्चिदानन्द सिंह ने चार महाराजाओं को हराकर बंगाल विधान परिषद् की ओर से केन्द्रीय विधान परिषद् में विधि सदस्य के रूप में नियुक्त हुए। 1911 ई. में दिल्ली दरबार में जार्ज पंचम के आगमन में केन्द्रीय परिषद् के अधिवेशन के दौरान सच्चिदानन्द सिंह, अली इमाम एवं मोहम्मद अली ने पृथक बिहार की माँग की। फलतः इन बिहारी महान सपूतों द्वारा 12 दिसम्बर, 1911 को दिल्ली के शाही दरबार में बिहार और उड़ीसा को मिलाकर एक नया प्रान्त बनाने की घोषणा हुई। इस घोषणा के अनुसार 1 अप्रैल, 1912 को बिहार एवं उड़ीसा नये प्रान्त के रूप में इनकी विधिवत् स्थापना की गई। बिहार के स्वतन्त्र अस्तित्व का मुहर लगने के तत्काल बाद पटना में भारतीय राष्ट्रीय कांग्रेस का 27वाँ वार्षिक सम्मेलन हुआ। मुगलकालीन समय में बिहार में बिहार एक अलग सूबा था। मुगल सत्ता समाप्ति के समय बंगाल के नवाबों के अधीन बिहार चला गया। फलतः बिहार की अलग राज्य की माँग सर्वप्रथम मुस्लिम और कायस्थ ने की थी। जब लार्ड कर्जन ने बंगाल को 1905 ई. में पूर्वी भाग एवं पश्चिमी भाग में बाँध दिया था तब बिहार के लोगों ने इस प्रस्ताव का विरोध किया एवं सच्चिदानन्द सिंह एवं महेश नारायण ने अखबारों में वैकल्पिक विभाजन की रूपरेखा देते हुए लेख लिखे थे जो **“पार्टीशन ऑफ बंगाल”** और **“लेपरेशन ऑफ बिहार”** 1906 ई. में प्रकाशित हुए थे।

इस समय कलकत्ता में राजेन्द्र प्रसाद अध्ययनरत थे वे वहाँ बिहारी क्लब के मन्त्री थे। डॉ. सच्चिदानन्द सिंह, अनुग्रह नारायण सिंह, हमेश नारायण तथा अन्य छात्र नेताओं से विचार-विमर्श के बाद पटना में एक विशाल बिहार छात्र सम्मेलन करवाया। यह सम्मेलन दशहरा की छुट्टी में पहला बिहारी छात्र सम्मेलन पटना कॉलेज के प्रांगण में पटना के प्रमुख शर्फुद्दीन के सभापतित्व में सम्पन्न हुआ था। इससे बिहार पृथक्करण आन्दोलन पर विशेष बल मिला। 1906 ई. में बिहार टाइम्स का नाम बदलकर बिहारी कर दिया गया। 1907 ई. में महेश नारायण का निधन हो गया। सच्चिदानन्द ने ब्रह्मदेव नारायण के सहयोग से पत्रिका का सम्पादन जारी रखा।

बिहार प्रादेशिक सम्मेलन की स्थापना 12-13 अप्रैल, 1906 में पटना में हुई जिसकी अध्यक्षता अली इमाम ने की थी इसमें बिहार को अलग प्रान्त की माँग के प्रस्ताव को पारित किया गया।

### भारतीय राष्ट्रीय आन्दोलन एवं नव बिहार प्रान्त के रूप में गठन

भारतीय राष्ट्रीय आन्दोलन में बिहार का महत्वपूर्ण योगदान रहा है। 1857 ई. के विद्रोह का प्रभाव उत्तरी एवं मध्य भारत तक ही सीमित रहा। इस आन्दोलन में मुख्य रूप से शिक्षित एवं मध्यम वर्गों का योगदान रहता था।

राष्ट्रीय चेतना की जागृति में बिहार ने अपना योगदान जारी रखा। बिहार और बंगाल राष्ट्रीय चेतना का प्रमुख केन्द्र रहा। सार्वजनिक गठन की 1880 ई. में नींव रखकर भारतीय जनता में राष्ट्रीयता की भावना को जगाया। 1885 ई. में राष्ट्रीय कांग्रेस की स्थापना हो चुकी थी। 1886 ई. में कलकत्ता के कांग्रेस अधिवेशन में बिहार के कई प्रतिनिधियों ने भाग लिया था। दरभंगा के महाराजा लक्ष्मेश्वर सिंह कांग्रेस को आर्थिक सहायता प्रदान की थी।

### नव राज्य का गठन

रेग्यूलेटिंग एक्ट के तहत बिहार के लिए एक प्रान्तीय सभा का गठन किया तथा 1865 ई. में पटना और गया के जिले अलग-अलग किये गये।

1894 ई. में पटना से प्रकाशित समाचार-पत्र के माध्यम से बिहार पृथक्करण आन्दोलन की माँग की गई। इस पत्रिका के सम्पादक महेश नारायण और सच्चिदानन्द थे, जबकि किशोरी लाल तथा कृष्ण सहाय भी शामिल थे। कुर्था थाना में झण्डा फहराने की कोशिश में श्याम बिहारी लाल मारे गये। कटिहार थाने में झण्डा फहराने में कपिल मुनि भी पुलिस का शिकार हुए।

ब्रिटिश सरकार आन्दोलन एवं क्रान्तिकारी गतिविधियों से मजबूर होकर अपने शासन प्रणाली के नीति को बदलने लगी। इस बीच गाँधी जी ने 10 फरवरी, 1943, को 21 दिन का अनशन करने की घोषणा की। समाचार-पत्र में बिहार हेराल्ड, प्रभाकर योगी ने गाँधी जी की रिहाई की जोरदार माँग की। अक्टूबर, 1943 के बीच लॉर्ड वेवेल वायसराय बनकर भारत आया। इसी समय 22 जनवरी, 1944 को गाँधी जी की पत्नी श्रीमती कस्तूरबा का देहान्त हो गया। मुस्लिम लीग ने बिहार का साम्प्रदायिक माहौल को बिगाड़ कर विभाजन करो और छोड़ों का नारा दे रहा था। मुस्लिम लीग ने 4 फरवरी, 1944 को उर्दू दिवस तथा 23 मार्च को पाकिस्तान दिवस भी मनाया गया। 6 मई, 1944 को गाँधी जी को जेल से रिहा कर दिया। अनुग्रह नारायण सिंह, बाबू श्रीकृष्ण सिंह, ठक्कर बापा आदि नेताओं की गृह नजरबन्दी का आदेश निर्गत किये गये।

जून, 1945 में सरकार ने राजनैतिक गतिरोध को दूर करते हुए एक बार फिर मार्च, 1956 ई. में बिहार में चुनाव सम्पन्न कराया गया। विधानसभा की 152 सीटों में कांग्रेस को 98, मुस्लिम लीग को 34 तथा मोमीन को 5 सीटें मिलीं। 30 मार्च, 1926 को श्रीकृष्ण सिंह ने नेतृत्व में कांग्रेस द्वारा अन्तरिम सरकार का गठन का मुस्लिम लीग ने प्रतिक्रियात्मक जवाब दिया। देश भर में दंगा भड़क उठा जिसका प्रभाव छपरा, बांका, जहानाबाद, मुंगेर जिलों में था। 6 नवम्बर, 1946 को गाँधी जी ने एक पत्र जारी कर काफी दुःख प्रकट किया।

19 दिसम्बर, 1946 को सच्चिदानन्द सिंह की अध्यक्षता में भारतीय संविधान सभा का अधिवेशन शुरू हुआ। 20 फरवरी 1946 में घोषणा की कि ब्रिटिश जून, 1948 तक भारत छोड़ देगा।

14 मार्च, 1946 को लार्ड माउण्टबेटन भारत के वायसराय बनाये गये। जुलाई, 1947 को इण्डियन इंडिपेंडेंट बिल संसद में प्रस्तुत किया। इस विधान के अनुसार 15 अगस्त, 1947 से भारत में दि स्वतन्त्र औपनिवेशिक राज्य स्थापित किये जायेंगे। बिहार के प्रथम गवर्नर जयरामदु2स दौलतराम और मुख्यमंत्री श्रीकृष्ण सिंह बने तथा अनुग्रह नारायण सिंह बिहार के पहले उप मुख्यमंत्री सह वित्त मंत्री बने।

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2. बिहार एक परिचय, इम्तयाज अहमद, पेज 18-203।
3. बिहार एक परिचय, विश्वेश्वर दास, राकेश बहादुर सिंह एवं विजय कुमार मिश्रा, पेज 1-104।
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5. बिहार सामान्य ज्ञान, लूसेंट पब्लिकेशन, विजय कर्ण।

# प्राचीन भारत के धार्मिक आंदोलन: एक अध्ययन

डा. कमलेश कुमार\*



600 ई. पू. में भारत में एक धार्मिक आंदोलन उठ खड़ा हुआ जिसने भारतीय जनमानस को बौद्धिक रूप से आंदोलित कर दिया। 6 शताब्दी ई. पू. का काल बौद्धिक चिंतन का युग माना जाता है। इस समय भारत में बुद्ध तथा महावीर जैसे चिंतक हुए। इसी समय संसार में भी धार्मिक आंदोलन का माहौल बना हुआ था। यूनान में “पाइथागोरस”, ईरान में “जटशुष्ट”, चीन में “कन्फूसियस” एवं “लाओत्से” जैसे चिंतक हुए।

इस काल में परंपरागत लौकिक धर्म अपनी गति से चल रहा था। इसमें इन्द्र देवता का प्रधान माना जाता था। उसे शक्र तथा मधवा कहा जाता था। बौद्ध ग्रंथों में ब्रह्मा (बम्मा) का भी उल्लेख है। रुद्र को “भगवान शिव” के रूप में माना जाता था।

पाणिनी ने “वासुदेव सम्प्रदाय” की चर्चा की है, जो “भागवत धर्म” से जुड़ा हुआ था। महाभारत में भी “कृष्ण पूजा” का उल्लेख है।

जैन ग्रंथों में स्कंद की चर्चा है जो, शिव के पुत्र थे। इस युग में भी नाग पूजा होती थी। बौद्ध एवं जैन धर्म ग्रंथों में यक्ष की पूजा का भी उल्लेख मिलता है।

6 शताब्दी ई. पू. में पूर्वी उत्तर प्रदेश तथा बिहार (उत्तर भारत के गांगेय प्रदेश) के जन जीवन में सामाजिक, आर्थिक दृष्टि से नगरीकरण, शिल्प समुदाय के विस्तार तथा व्यापार व वाणिज्य में तीव्र विकास, तत्कालीन धर्म एवं दार्शनिक चिंतन में होने वाले परिवर्तनों में घनिष्ठ रूप से संबंध थे। परंपरागत रुढिवादि व नगरों में उभरते नये वर्गों की आकांक्षाओं में होने वाले संघर्ष ने इस प्रक्रिया का प्रगतिशील बनाया तथा इसके चिंतन के क्षेत्र में ऐसी एक नवीन शक्ति तथा अद्भुत सम्पन्नता का आविर्भाव हुआ। जिसने न केवल भारत में बल्कि एक बड़े जन समुदाय को प्रभावित किया।

\*मगध विश्वविद्यालय बोध गया (बिहार)

इस बौद्धिक गतिविधि का केन्द्र **मगध** था। मगध में इस काल में एक विशाल साम्राज्य की नींव भी पड़ रही थी।

इस आंदोलन के कई प्रत्यक्ष और परोक्ष कारण थे जो तत्कालीन सामाजिक, धार्मिक, आर्थिक परिवर्तनों में देखे जा सकते हैं। सामाजिक स्तर पर आर्य—अनार्य, ब्राहमण—क्षत्रिय परंपरागत **वर्ण व्यवस्था** एवं विभिन्न जातियों में परस्पर संघर्ष की कल्पना की जा सकती है।

**वैदिक धर्म** नितांत प्रवृत्ति मार्गी था, वैदिक आर्य सदैव श्रेष्ठ धन तथा ऐश्वर्य की कामना करते थे। इस विचारधारा के प्रति विरोध का आभास समाज के एक प्रबुद्ध वर्ग में **ऋग्वैदिक** काल से ही देखने को मिलता है।

**जैन व बौद्ध** धर्म के उत्थान से पूर्व अने मतमतांतरों का उदय हो रहा था। लेकिन यह युग मुख्य रूप से निवृत्ति मार्गी विचारधारा से भरा दिखाई देता है। इस युग में सामाजिक, राजनैतिक, आर्थिक परिवर्तन हुए। जहाँ कुछ लोगों ने सहज आध्यात्मिक प्रेरणा से निवृत्ति मार्गी धर्म को स्वीकार किया, वही लोगों ने राजनीतिक हीनता का आर्थिक कठिनाइयों से मुक्ति पाने का मार्ग अपनाया।

कठिन सामाजिक तथा आर्थिक कठिनाइयों से त्रस्त लोगों का ऐसे धार्मिक आंदोलनों की ओर आकर्षित होना स्वाभाविक था, जिससे इन कठिनाइयों से मुक्ति से उपाय निहित थे।

बुद्ध तथा महावीर स्वामी के अलावा इस युग में कई चिंतक और भी हुये, जिन्होंने इस धार्मिक आंदोलन में महत्वपूर्ण भूमिका निभाई।

बौद्ध ग्रंथों के अनुसार इस काल में **62** धार्मिक सम्प्रदाय अस्तित्व में थे तथा **जैन ग्रंथों (सूत्र कृतांग)** के अनुसार इस युग में कुल धार्मिक की संख्या 363 थी।

## अजित केशकंबीलन

ये भारत के सबसे पहले **भौतिकवादी चिंतक** थे। इनका मानना था कि अच्छे व बुरे कर्मों का कोई फल नहीं होता। इनका मानना था कि प्रत्येक घटना अपने स्वभाव के अनुरूप होती है। अतः जो इच्छा हो वो करो। इसे **इच्छावादी** भी कहा गया।

## पुरण कश्यप

इनका मानना था कि न तो कर्म होता है तथा न पुनर्जन्म। **दर्शन** की नींव इन्होंने ही डाली थी। आत्मा शरीर से पृथक है। इनका संप्रदाय **मन्खलिंगोशाल** के संप्रदाय में वलयी हो गया था।

## मन्खली गोशाल

ये 6 वर्षों तक **महावीर स्वामी** के साथ रहे। फिर **आजीवक संप्रदाय** की स्थापना की। इनका मानना था कि आत्मा को अनेक पुनर्जन्मों के पूर्व निर्धारित अटल चक्र से गुजरना पड़ता है फिर प्रत्येक जन्म में वह शरीर से संबंधित होता है। वह होगा ही, चाहे उसके कर्म कैसे भी हों। उन्हें **“नियतिवादी”** कहा जाता है **बिंदुसार** ने इस धर्म को संरक्षण दिया। अशोक एवं दशरथ ने इसे गुफाएं दान में दी।



## कात्यायन

यी भी नियतिवादी थे। कात्यायन भी कर्म व पुनर्जन्म में विश्वास नहीं रखते थे। उनके विचार में सात वस्तुएं— “*पृथ्वी, जल, वायु, सुख, दुख, तथा जीव न तो पैदा किए जा सकते और न ही नष्ट।*”

## संजय वेलट्टपुत्त

इन्हें “अनिश्यवादी” माना जाता है। इनका मानना था कि “*न तो यह कहा जा सकता है कि स्वर्ग है या नरक है या फिर ये दोनों ही नहीं है।*”

## चार्वाक

इन्हें *बृहस्पति* का शिष्य माना जाता है। ये “*लोकायत दर्शन*” के प्रतिपादक थे। इन्होंने *बृहस्पति सूत्र* (ग्रंथ) लिखा था। ये “*भौतिकवादी दार्शनिक*” थे। इनका मानना है कि प्रत्यक्ष अनुभव ही एक मात्र ज्ञान का साधन है।

संभवतः इन अतिवादी तथा सामाजिक नैतिकता विहीन चिंतन में कार्य कारण संबंधी प्रकृति के नियम की धारण कार्य कर रही थी, जिससे इस विचार का विकास हुआ। प्रकृति में सदैव कार्य कारण संबंध कार्यरत है। जिसे न ईश्वर ही बदल सकता है तथा न ही कर्मकाण्ड या यज्ञों से ऐसा संभव है।

आज से सभी अंतर्विरोध धर्म एक बड़े धर्म *हिन्दू धर्म* के तहत संगठित होकर भारत निर्माण में कंधे से कंधा मिलाकर चल रहे हैं।

## सन्दर्भ ग्रन्थ सूची

1. विशुद्धिमग्ग, बुद्धघोष।
2. माध्यमिक कारिका, नागार्जुन।
3. प्रज्ञापारमिता, नागार्जुन
4. सूत्रालंकार, असंग।
5. लंकावतार सूत्रा, असंग।
6. प्रमाण समुच्चय, वसुबंधु।
7. आलंबन परीक्षा, वसुबंधु
8. शिक्षा समुच्चय, चंद्रगोमित।
9. दिव्यावदान।
10. ललित विस्तार।
11. आचारांग सूत्रा।
12. भगवती सूत्रा।
13. हेमचंद्र, परिशिष्ट पर्व।
14. भद्रबाहु कृत कल्प-सूत्रा।
15. शिक्षा समुच्चय, चंद्रगोमित।

## भारतीय संस्कृति और पर्यावरण संरक्षण: एक ऐतिहासिक सर्वेक्षण

डॉ. कमलेश कुमार\*

पर्यावरण संरक्षण की शिक्षा बचपन से ही आरम्भ की जाए और लोगों के मन में विश्वास कायम किया जाए, जब एक अबोध बालक अपने आस-पास की नैसर्गिक सुन्दरता से अति प्रसन्न होता है, तो एक परिपक्व मस्तिष्क उसके विनाश की बात क्यों सोचता है इसलिए हमें यह प्रयास करना चाहिए कि हम लोगों को ज्यादा से ज्यादा प्राकृतिक सुन्दरता का अनुसरण कराये और इससे सम्बन्धित ज्ञान दें और उन्हें इस बात से परिचित कराये कि हम चारों ओर से पर्यावरण के द्वारा प्रदान किये गये सुरक्षा कवच से घिरे हैं तो हमें इस कवच में सुराख करने की कभी भी नहीं सोचनी चाहिए, अपितु उसे अपितु मजबूती प्रदान करनी चाहिए।

आज परिधान से लेकर खान-पान, ज्ञान से लेकर सम्मान, उत्पादन से लेकर उपभोग विकास से लेकर विनाश और समझने से लेकर विचारने तक सभी कुछ पश्चिमी तौर-तरीकों से ग्रस्त है। यद्यपि हमें विश्व का सबसे बड़ा तथा श्रेष्ठ लोकतंत्र होने का गौरव प्राप्त है और विश्व के अनेक देशों की संस्कृति हमारे पूर्वजों व विद्वानों के उपदेशों से सिंचित तथा पोषित हुई तथा दुनिया को हमने संस्कृति, सभ्यता की नसीहत दी फिर भी आज दुर्भाग्यवश अपने घर में ही हमारी संस्कृति परापेक्षी तथा विखण्डित होकर रह गयी। आज हम यदि बच्चों से यह कहते हैं कि पेड़ों, नदियों, तालाबों, पहाड़ों, गुफाओं, कन्दराओं, घाटियों के किनारे बैठकर हमारे ऋषियों, तपस्वियों, चित्तको, साधु-सन्तों ने ज्ञान अर्जन किया और धार्मिक ग्रन्थों की रचना की तथा देश-विदेशों में भ्रमण करके भारतीय चिन्तकों ने अपनी सभ्यता तथा संस्कृति से विश्व जनसमुदाय को अवगत कराया तो खेद की बात है कि उन्हें विश्वास ही नहीं होता और यह सब उन्हें एक कहानी सी लगने लगती है। यद्यपि दोष उनका नहीं है। इसके लिये दोषी हम हैं, उन्हें परिवेश ही नहीं दिया गया, जहाँ उन्हें नैतिक शिक्षा से परिचित कराया जाता।

संस्कृति तथा विज्ञान का आपस में अविच्छेद सम्बन्ध है अर्थात् यह एक दूसरे के पूरक हैं। यदि संस्कृति मानव के हृदय को परिष्कार, परोपकार, समाज सेवा, सहयोग सहानुभूति प्रदान करती है, तो विज्ञान मानव को बाह्य रूप से मजबूती प्रदान करता है। संस्कृति की सफलता देश के लोगों की निपुणता, नेतृत्व, संयम, उत्कण्ठा तथा इसे सामाजिक हितों के अनुकूल बनाने पर निर्भर करती है। जिस जनसमुदाय में अपने देश की समस्याओं को सुलझाने की प्रबल इच्छा हो और वे उदासीन तथा अदृष्ट न हो, बल्कि स्वतः सामुदायिक कार्यकलाप में अभिक्रम करने की श्रेष्ठ तथा क्रियाशील क्षमता रखते हों, तो उस देश अथवा स्थान की संस्कृति मानवतावादी, सृजनात्मक अवश्य होगी।

भारतीय संस्कृति पर्यावरण-संरक्षण में महत्वपूर्ण तथा सकारात्मक भूमिका रखती है। मानव तथा प्रकृति के बीच अटूट रिश्ता कायम किया गया है। जो पूर्णतः वैज्ञानिक तथा संतुलित है। हमारे शास्त्रों में पेड़, पौधों, पुष्पों, पहाड़ झरने, पशु-पक्षियों, जंगली-जानवरों, नदियाँ, सरोवर, वन, मिट्टी घाटियों यहाँ तक कि पत्थर भी पूज्य हैं उनके प्रति स्नेह तथा सम्मान की बात बतलायी गयी है। बुद्धिजीवियों का यह चिन्तन पर्यावरण को प्रदूषण से मुक्त रखने के लिए सार्थक तथा संरक्षण के लिये बहुमूल्य हैं।

\*मगध विश्वविद्यालय बोध गया (बिहार)

आज समाज का एक प्रबुद्ध वर्ग यह मानकर चलाता है कि हम उस संस्कृति में विश्वास नहीं रखते जो दकियानूसी या फिर देवी-देवताओं वाले धर्म को मानती है अर्थात् उनका इसके पीछे यह तर्क है कि वे आस्तिकता पर कतई ध्यान नहीं देते तथा भौतिक समृद्धि को ही जीवन का लक्ष्य मानते हैं, वे ऐसी संस्कृति में लौटना नहीं चाहते जो उपरोक्त सजीव तथा निर्जीव तत्वों को किसी न किसी रूप में पूजती और स्वीकार करती है। मेरा सवाल यह है कि प्रत्येक मनुष्य, समुदाय, वर्ग अपना रास्ता चुनने तथा संस्कृति को मानने के लिए स्वतंत्र हैं वह किसी भी चीज को सर्वोपरि ठहरा सकता है। मनुष्य नास्तिक हो या आस्तिक, धार्मिक हो या अधार्मिक क्या फरक पड़ता है? लेकिन पर्यावरण हमारे चारों ओर है। हवा, भोजन, पेड़-पौधे, पानी, जीव-जन्तु का महत्व जितना आस्तिक के लिये है, उतना ही नास्तिक के लिए भी है। प्राकृतिक विपदायें आने से पहले यह नहीं पूछती हैं कि कौन आस्तिक है और कौन नास्तिक। जब प्रदूषण की आँधी आती है, वह सब अपने में समेटकर ले जाती है। कहने का अभिप्राय है कि पर्यावरण का संरक्षण करना हमारा नैतिक दायित्व है क्योंकि संरक्षण करना अपने आपको जीवन देना है। पर्यावरण की कोई भौगोलिक तथा राजनैतिक सीमा नहीं होती है। यह विश्व-व्यापी है इसके साथ किया गया प्रतिशोध मनुषुत्रों को हमेशा-हमेशा के लिए काल के गाल में धकेल देगा।

## चिन्तन

भारतीय की जनता का एक बहुत बड़ा वर्ग आज भी अपनी संस्कृति को पूज्य तथा विश्वसनीय मानता है। हमारे देश में अनेक तीर्थ स्थानों को पवित्र तथा त्योहारों को मनाने की परम्परा आज भी विद्यमान है। जहाँ हर दिन, सप्ताह, महीना, साल सांस्कृतिक मान्यताओं से ओत-प्रोत है वहाँ सभी दिन तथा त्योहार तीर्थ प्राकृतिक संसाधनों से सम्बन्धित है। नगाधिराज हिमालय से लेकर कन्या कुमारी तक तीर्थों की शृंखला सी बनी हुई है। इस पवित्र वातावरण में मनुष्य प्रवेश करके निष्पाप हो जाता है। इस तरह की यात्रा के पीछे यह प्रावधान रखा गया, कि मानव विभिन्न जगहों की भौगोलिकता, पर्यावरण का ज्ञान, मनोरंजन के स्थल, अभयारण्य, अरण्य, सरोवर, झीलो के शुभ दर्शन कर सकते हैं। इससे लोगों के रहन-सहन जीवनचर्या और जीवन-यापन करने के तौर-तरीकों का बोध होता है और अनेकता में एकता का आभास मिलता है साथ ही मानव नैसर्गिक सौन्दर्यता से प्रभावित होता है और उसे मानसिक शान्ति की अनुभूति होती है।

हमारी संस्कृति पर्यावरण संरक्षण प्रधान रही है, जो प्रदूषण पर लगाम लगाती है और आध्यात्मिक मनोविज्ञान को स्वीकार करती है और यह स्पष्ट करती है कि मानव के प्राणों की सुरक्षा तथा पवित्रता की सुरक्षा प्राकृतिक संसाधनों की रक्षा पर निर्भर करती है। भारतीय संस्कृति के अनुसार जिस मनुष्य को आध्यात्मिक अनुभूति हो जाती है तो वह अल्प साधनों से अपने हितों की पूर्ति कर सकता है, वह हर तरह से सामाजिक तथा आर्थिक बंधनों से मुक्त हो जाता है। ऊँच-नीच के भेदभाव से ऊपर उठ जाता है। आज जरूरत इस बात की है कि मानव अपनी शक्ति को देशहित में सुदृढ़ बनाए और नैतिक मूल्यों को समझे तथा नैतिक अनुशासन से नियमबद्ध हो, तभी उसकी भौतिकतावादी प्रवृत्ति पर अंकुश लग सकता है। हमारे प्राचीन शास्त्रों में इस बात के स्पष्ट प्रमाण हैं कि इस तरह के कार्य को सम्पन्न करने के लिये किसी विशेष अध्ययन तथा चिन्तन की आवश्यकता नहीं होती है।

कालिदास, सूरदास, रसखान, तुलसीदास, कबीरदास ने किसी संस्था से शिक्षा प्राप्त नहीं की, लेकिन अपनी रचनाओं में प्रकृति को इस तरह चित्रित किया कि इसके विनाश की बात सोची भी नहीं जा सकती। कालिदास ने पर्यावरण संरक्षण के विचार को 'मेघदूत' तथा 'अभिज्ञान शाकुन्तलम्' में दर्शाया। रामायण तथा अन्य धार्मिक ग्रन्थों, उपनिषदों में वन, नदी, जीव-जन्तु, पशु-पक्षियों की भूरि-भूरि प्रशंसा की गयी। ये कृतियाँ जितनी तत्कालीन समाज में लोकप्रिय रही होंगी, ठीक वहीं उसमें भी अधिक आज की व्यवस्था के अनुप और न्यायसंगत हैं। अन्तर विरोध इस बात का है तब भारतीय नैतिक अनुशासन अन्तर्मुखी तथा आत्मसंयम और त्याग पर बल देता था और दूसरों को समाज (पेड़-पौधे, जीव-जन्तु) तथा उन पर शासन एवं अधिकार करने तक समर्थन नहीं करता था। इस बात पर ध्यान केन्द्रित करने की आत्म प्रेरणा दी जाती थी कि चिन्तन तथा मनन के द्वारा नैतिक उत्साह और अन्तर्दृष्टि प्राप्त की जाय जिससे बाह्य शक्तियों (साधनों की खोज में ये भाग-दौड़, जोखिम और प्राकृतिक संसाधनों के प्रति रोष) पर अत्यधिक दबाव न डाला जा सके तथा अपने ऊपर विजय पायी जाय। महाभारत की एक कथा के अनुसार भारतीय ऋषियों ने राक्षसों का सर्वनाश करने के लिये अपनी अस्थियों को भी दान स्वरूप दे दिया था। खेद की बात है, आज हम अपने अनन्त स्वार्थों की पूर्ति के लिए किसी अन्य सभ्यता तथा संस्कृति से प्रभावित होकर पूँजी और विकास को केन्द्र बिन्दु या जीवन का प्रमुख आधार मान बैठे हैं और अपने प्राणों के रक्षक पर्यावरण को खत्म कर रहे हैं उसे प्रदूषित कर रहे हैं।

### पर्यावरण संरक्षण तथा शास्त्र

रामायण, महाभारत, गीता, वायु-पुराण, स्कन्दपुराण, भविष्य पुराण, वराहपुराण, ब्रह्मपुराण, मार्कण्डेयपुराण, मत्स्यपुराण, गरुरपुराण श्री विष्णुपुराण, भागवतपुराण श्रीमद्भागवत पुराण, वेद, उपनिषद तथा कुरान, बाईविल, श्रीगुरु ग्रन्थ तथा अन्य धार्मिक ग्रन्थ, पेड़-पौधे, जीव-जन्तुओं पर दया करने की सीख देते हैं। यदि ध्यान से इन शास्त्रों की बातों को पढ़ा तथा सुना जाय तो मनाव से इनका सम्बन्ध अन्तरंग है और इनके विनाश की बात तो सोची भी नहीं जा सकती। मानसिक शान्ति, शारीरिक सुख, इन सबकी पूर्ति के साधन प्राकृतिक सम्पदा ही है। गेहूँ, जौ, तिल, चना, चन्दन, लाल पुष्प, केसर, खस, कमल, ताम्बूल, श्वेत, पुष्प, मिट्टी, फल, तुलसी, हल्दी पीत-पुष्प, शहद इलाइची, सौंफ, उड़द, काले-पुष्प, सरसों के फूल, मुलेठी देवदारु, बिल्व वृक्ष की छाल, आम, पला, खैर, पीपल, गूलर, टूब, कुश आदि। उपरोक्त सभी को संरक्षित रखने के उद्देश्य से इन्हें किसी दिन, त्योहार, देवी-देवताओं की पूजा-अर्चना से जोड़ा गया है। औषधि के रूप में फलों तथा जड़ी-बूटियों की रक्षा करने की बात की गयी है और इन्हें घरों के निकटस्थ लगाकर पर्यावरण को स्वच्छ रखने की सलाह दी गयी है। जैसे- अंगूर, केला, अनार, सेव, जामुन, प्याज, लहसुन, गाजर, मूली, नींबू, अदरक, आंवला, घिया, बादाम, आम, टमाटर, अखरोट, अजवाइन अनन्नास, असगन्द, गिलोय, तम्बाकू, तरबूज तुलसी, दालचीनी धनिया, पुदीना, संतरा, पान, पीपल, बबूल, ब्राहमीबूटी, काली मिर्च, लाल मिर्च, लौंग, हरड़ बहेड़ा आदि अनेक बूटियों का प्रयोग करने से मनुष्य निरोग रह सकता है।

प्राकृतिक चिकित्सा पद्धति में शुद्ध वायु, शुद्ध पानी, शुद्ध मिट्टी इन चीजों को मुख्य आधार मानकर चिकित्सा की जाती है और आसाध्य रोगों का इलाज इनसे कर दिया जाता है। गंगा, यमुना, झीलें, सरोवर, तालाब, झरने, नाले के पानी से नहाने पर निष्पाप तथा चर्म रोग दूर हो जाते हैं। ऐसा इसलिए कि मनुष्य

इनकी साफ-सफाई तथा उचित रख-रखाव की व्यवस्था को बनाये रखे। वन्य जीव-जन्तुओं का भी हमारे शास्त्रों में बहुत अच्छी तरह से वर्णन प्रस्तुत किया गया है ज्ञान तथा नैतिक शिक्षा पर आधारित पंचतंत्र की कथायें जातक कथायें अनेक ग्रन्थ जीव-जन्तुओं की उपमा से भरे पड़े हैं। इनमें से कई को देवी-देवताओं के वाहन के यप में प्रस्तुत किया गया है। माँ श्री दुर्गा का वाहन शेर, श्री शिव भगवान जी वाहन बेल, श्री इन्द्र जी का ऐरावत हाथी, श्री गणेश जी का चूहा, सर्प, हंस, हनुमान जी भालू आदि ऐसे ही प्रतीक हैं। वन्य प्राणियों के प्रति प्रेम तथा आदर की भावना के बाद भी आज अनेक प्रजातियाँ विलुप्त होती जा रही हैं, जो जीव-जन्तु बचे हैं सराकर इनके संरक्षण के लिए अत्यधिक चिन्तित है। इसलिए चौदह आरक्षित जीव मण्डलों की स्थापना की गयी है। समस्त जीव मण्डलों को एक दूसरे से जोड़ने के लिए सरकार एक राष्ट्रीय नीति बनाने पर विचार कर रही है। जानवरो की खाल तथा हड्डियों और चोरी छिपे इनका वध करने वालों को कड़ी सजा दी जानी चाहिए। फर सके पर्स, टोपी, कोट, हड्डियों से बने दवाओं पर पाबन्दी तथा इनका विकल्प खेजने के लिए अनुसंधान किये जाने चाहिए।

मनुष्य के जीवन को सफल बनाने में तथा उसके अस्तित्व को सुरक्षित रखने के लिए औषधि उदर पूर्ति के लिए कन्दमूल फल, शरीर ढकने के लिए वस्त्र, कारखाने चलाने हेतू कच्चा माल, भूमि को उपजाऊ तथा भू-स्खलन से बचाने में पेड़ पौधों की भूमिका को कदापि नकारा नहीं जा सकता। कार्बनडाइऑक्साइड को अमृत (ऑक्सीजन) में परिवर्तित पेड़-पौधे ही करते हैं। पूजा-हवन, यज्ञ करने में पुष्प समिधाओं की परम आवश्यकता होती है। पेड़ों में अनेक देवी-देवताओं का वास बतलाया गया है। गीता में स्वयं भगवान कृष्ण कहते हैं कि मैं पेड़ों में स्वयं पीपल का वृक्ष हूँ, तुलसी का पौधा स्वयं विष्णुप्रिया के रूप में पूजनीय है। सन्तान प्राप्ति के लिए बरगद की पूजा की जाती है। चन्दन की लकड़ी चिता से लेकर माथे की शोभा तक बढ़ाता है। और अपनी शीतलता के लिए अतुलनीय है। हवन यज्ञ में प्रयोग आने वाली समिधाओं जैसे- आम, चन्दन, पीपल, पाकड़ देवदार, बेल, नीबू, धतूरा इनके फल टहनियों, छाल से आहुति दी जाती है। भगवान राम ने अपने जवीन के चौदह वर्ष तथा पाण्डवों को जब वनवास दिया गया तो इन्होंने अपनी उदर पूर्ति कन्दमूल, फल तथा तन ढकने के लिए वृक्ष की पत्तियों तथा छाल का ही प्रयोग किया। भगवान राम ने दण्डक व, वन कृष्ण ने वृन्दावन, पाण्डवों ने खाण्ड-वन, शौनकादि ऋषियों ने नैमिषारण्य वन, इन्दु ने नन्दन वन का निर्माण कराया। तुलसीदास जी वनों से इतने प्रभावित थे कि उन्होंने जीवन काल के चौथे चरण में वनागमन के आवश्यक माना है। भगवान शंकर की पूजा अर्चना के लिए बेल-पत्तियों की परम आवश्यकता होती है। मत्स्यपुराण की जानकारी के अनुसार दस कुँओं के बराबर, क बाबड़ी, दस बावड़ियों के बराबर एक तालाब, दस तालाबों के बराबर एक पुत्र, दस पुत्रों के बराबर एक वृक्ष होता है। शास्त्रों में ही यह बतलाया गया है कि सौ पुत्रों से उतना सुख नहीं मिलता, जितना एक वृक्ष लगाने से होता है।

मत्स्य पुराण में इस बात का भी उल्लेख है कि शास्त्र, जालशय, वृक्ष, मन्दिर ये चारों अमर हैं। मनुष्य के मर जाने के पश्चात् भी यह जीवित शरीर कहे जाते हैं। सुभासितावली में कहा गया है लम्बे फलों ने मृगों को, पुष्पों ने भ्रमरों को, फलों ने पक्षियों को छाया ने गर्मी से पीड़ितों को, सुगन्ध ने वायु को सदा आनन्दित किया है। चाणक्य जैसे निपुण नीतिज्ञ भी साम्राज्य की स्वच्छता का आधार पर्यावरण को मानता है और उसने पशुओं से सीख लेने का आग्रह भी किया है। सिंह से एक, बगुले से एक, मुर्ग से चार, कुत्ते से छः गदहे से तीन गुण ग्रहण करने चाहिए।

## कुछ महत्वपूर्ण वृक्ष

सभी प्रकार के पेड़-पौधे पर्यावरण को प्रदूषण से बचाने से महत्वपूर्ण भूमिका अदा करते हैं। जैसे:—

### इमली

इस वृक्ष से छाया, पर्यावरण को प्रदूषण से बचाने, एक लम्बे समय तक जीवित रहने तथा इसकी चटनी तथा कड़ी और इसके बीजों की छाल से छिद्रों को बन्द किया जाता है, इसका प्रयोग पेण्ट में भी किया जाता है।

### आंवला

वायु को शुद्ध, औषधियों में प्रयोग, त्रिफलाचूर्ण में आंवले का एक भाग मिलाया जाता है, तथा अष्टमी, नवमी को जोड़ों में स्वच्छ वायु करने के लिए इसकी पूजा अर्चना की जाती है।

### पीपल

सर्वाधिक प्राणवायु, घनी तथा शीतल छाया, वृक्ष तथा बीज औषधि के काम आते हैं। भगवान बुद्ध ने इसी पेड़ के नीचे बैठकर ज्ञान अर्जित किया था। भारतीय सुप्रसिद्ध ज्योतिषी 'बराहमिहिर' ने इसके महत्व को देखते हुए घर के आगे इस पेड़ को लगाने का आग्रह किया है तथा इसकी पूजा भी की जाती है।

### नीम

त्वचा रोग में विशेष लाभदायक, कोमल पत्ती तथा फलों की सब्जी, टहनियों तथा पत्तियों से पेस्ट, साबुन तथा तेल तैयार किया जाता है। कीटनाशक से रूप में भी उपयोगी है। वायु को स्वच्छ रखता है इसलिए नीम के वृक्ष को घर के आस-पास लगाने की सलाह दी जाती है।

### अशोक

प्रदूषण की रोकथाम में अग्रगण्य तथा इस पेड़ के बारे में यह भी कहावत है कि सीता-राम जी का मिलन इसी पेड़ के नीचे हुआ था। इसलिए उन्होंने इससे प्रभावित होकर इसक जगह का नाम सीता वन रख दिया।

### बरगद

यह वृक्ष अपनी शीतलता तथा छाया के लिये प्रसिद्ध है। इसकी पत्तियों, टहनियों को कुष्ठ रोग की दवाओं में काम में लाया जाता है तथा इससे अनेक महत्वपूर्ण औषधियों का निर्माण भी किया जाता है। इसकी दूसरी विशेषता यह है कि इसमें मिट्टी को रोके रखने की अद्वितीय क्षमता है क्योंकि इसकी जड़ें दूर-दूर तक फैली रहती है।

### आम

स्वच्छ हवा, कीटनाशक तथा इसकी गुठलियों से फेफड़ों से सम्बन्धित, अनेक दवाएँ बनायी जाती हैं। शादी, हवन, पूजा, आदि शुभ कार्यों में इसकी पत्तियों तथा टहनियों का प्रयोग किया जाता है।

## जामुन

यह वायु को शुद्ध करता है इससे पेट सम्बन्धी, मधुमेह जैसी बीमारियों को ठीक किया जाता है। इसकी छाल तथा बीज से भी अनेक औषधियाँ बनायी जाती हैं।

## महुआ

यह वायु को शुद्ध करता है इससे पेट सम्बन्धी, मधुमेह जैसी बीमारियों को ठीक किया जाता है। इसकी छाल तथा बीज से भी अनेक औषधियाँ बनायी जाती हैं।

## पाकड़

इससे गीले की बीमारियाँ तथा त्वचा से सम्बन्धी रोगों को दूर किया जाता है और यह प्रदूषण को दूर करने में काफी सक्षम है।

## अर्जुन

इसकी जड़ों का उपयोग पेट से सम्बन्धित बीमारियों में किया जात है तथा इसकी छाल से हृदय और कान से सम्बन्धित दवायें बनायी जाती हैं। वातावरण को साफ करने में अहम भूमिका अदा करता है। रस तंत्र सार के अनुसार इसकी छाल को कूट—पीसकर काली गाय के धारोष्ण दूध के साथ एक वर्ष तक लगातार पीने से कुष्ठ रोग समाप्त हो जाता है।

## कदम्ब

इससे गले की बीमारियाँ तथा बुखार दूर किया जाता है इसकी पत्तियाँ काफी चौड़ी होती हैं तथा फूल काफी लोकप्रिय, घर की सजावट तथा पूजा—पाठ और देवी—देवताओं को अर्पित किये जाते हैं।

## वाज

यह वृक्ष ठण्डी जगहों पर होता है जमीन को रोके रखने तथा पानी को सीखने की अद्भुत क्षमता होती है।

## बुरांश

यह वृक्ष भी पहाड़ों में होता है। इसमें लाल फूल जो काफी चौड़े होते हैं, जिनसे शरबत बनाया जाता है जो अनेक बीमारियों के काम आता है इसमें पानी को सोखने की क्षमता होती है तथा इसकी पत्तियाँ चौड़ी व नुकीली होती हैं।

## चीड़

इस वृक्ष से लीसा प्राप्त होता है। इसके पेड़ काफी ऊँचे होते हैं। यह सूखी भूमि पर उगता है और इमारती लकड़ी तथा साज—सज्जा के समान में उपयोगी है। देहात में लोग लीसे से भी अनेक बीमारियों का इलाज करते हैं।

## देवदार

इसका वृक्ष अपनी जड़ों से मिट्टी को रोकने तथा पानी एकत्रित करने में अहम भूमिका अदा करता है इससे भी इमारती लकड़ी बनायी जाती है। इसकी टहनियों को हवन—यज्ञ के काम में लाया जाता है।

## ताड़ तथा खजूर

इन वृक्षों से ताड़ गुड़ तथा इनकी पत्तियों से पंखे तथा टोकरियाँ बनायी जाती हैं।

## ज्यूरा

इसके पत्ते काफी चौड़े होते हैं और वायु को स्वच्छ रखते हैं इसके बीज, तेल तथा घी का निर्माण करते हैं।

## साल

इस वृक्ष की लकड़ी का प्रयोग साज—सज्जा के सामान में किया जाता है और इसकी पत्तियाँ काफी चौड़ी होती हैं। यह गरम जगहों पर पाया जाता है।

## शीशम

इस वृक्ष की लकड़ी काफी उपयोगी तथा मजबूत मानी गयी है। इसलिए इसका ज्यादा प्रयोग इमारतों को बनाने में किया जाता है।

उपरोक्त विवेचन से हम यह स्पष्ट कर सकते हैं कि हमारी संस्कृति अद्वितीय, समृद्धशाली और सुगठित है। पर्यावरण के संरक्षण में नियमबद्ध तथा वैज्ञानिक प्रौद्योगिकी का सूत्र प्रदान करती है। इसमें कही भी संकीर्णता, धर्मान्धता, घृणा, पृथकता आदि दुर्गुणों के लिए कोई स्थान नहीं है। आवश्यकता इस बात की है हमें निष्ठापूर्वक नैतिक अनुशासन की समस्त जन समुदाय को शिक्षा देनी चाहिए जिससे पर्यावरण के प्रति प्रेम तथा उत्साह की भावना को प्रबल बनाया जा सके। हमारे शास्त्र किसी भी उद्देश्य को ध्यान में रखकर क्यों न रचे गये हों, एक बात स्पष्ट है कि आज यह व्यवस्था खास तौर पर पर्यावरण संरक्षण के लिए एक नयी दिशा तथा प्रदूषण से उत्पन्न चुनौतियों को जड़ से समाप्त करने में सक्षम है। पर्यावरण संरक्षण की शिक्षा बचपन से ही आरम्भ की जाए और लोगों के मन में विश्वास कायम किया जाए, जब एक अबोध बालक अपने आस—पास की नैसर्गिक सुन्दरता से अति प्रसन्न होता है, तो एक परिपक्व मस्तिष्क उसके विनाश की बात क्यों सोचाता है इसलिए हमें यह प्रयास करना चाहिए कि हम लोगों को ज्यादा से ज्यादा प्राकृतिक सुन्दरता का अनुसरण करायें और इससे सम्बन्धित ज्ञान दें और उन्हें इस बात से परिचित करायें कि हम चारों ओर से पर्यावरण के द्वारा प्रदान किये गये सुरक्षा कवच से घिरे हैं तो हमें इस कवच में सुराख करने की कभी भी नहीं सोचनी चाहिए, अपितु उसे मजबूती प्रदान करनी चाहिए।

## सन्दर्भ ग्रन्थ सूची

1. रामायण।
2. महाभारत।
3. गीता।



4. वायु-पुराण ।
5. स्कन्दपुराण ।
6. भविष्य पुराण ।
7. वराहपुराण ।
8. ब्रह्मपुराण ।
9. मार्कण्डेयपुराण ।
10. मत्स्यपुराण ।
11. गरुरपुराण ।
12. श्री विष्णुपुराण ।
13. भागवतपुराण ।
14. श्रीमद्भागवत पुराण ।
15. वेद ।
16. उपनिषद ।
17. कुरान ।
18. बाइबिल ।
19. श्रीगुरु ग्रन्थ ।

## परिवार का महत्त्व और उसका बदलता स्वरूप

डॉ. पम्मी कुमारी\*

परिवार व्यक्तियों का वह समूह होता है, जो विवाह और रक्त सम्बन्धों से जुड़ा होता है जिसमें बच्चों का पालन पोषण होता है। परिवार एक स्थायी और सार्वभौमिक संस्था है। किन्तु इसका स्वरूप अलग-अलग स्थानों पर भिन्न हो सकता है। पश्चिमी देशों में अधिकांश नाभिकीय परिवार पाये जाते हैं। नाभिकीय परिवार वे परिवार होते हैं जिनमें माता-पिता और उनके बच्चे रहते हैं। इन्हें एकाकी परिवार भी कहते हैं। जबकि भारत जैसे देश में संयुक्त और विस्तृत परिवार की प्रधानता होती है। संयुक्त परिवार वह परिवार है जिसमें माता पिता और बच्चों के साथ दादा दादी भी रहते हैं। यदि इनके साथ चाचा चाची ताऊ या अन्य सदस्य भी रहते हैं तो इसे विस्तृत परिवार कहते हैं। वर्तमान में ऐसे परिवार बहुत कम देखने को मिलते हैं। व्यापारी वर्ग में विस्तृत परिवार अभी भी मिलते हैं। क्योंकि उन्हें व्यापार के लिये मानव शक्ति की आवश्यकता होती है।

परिवार के बिना समाज की कल्पना नहीं की जा सकती। आगस्त कॉन्टे कहते हैं कि परिवार समाज की आधारभूत इकाई है। एक अच्छा परिवार समाज के लिये वरदान और एक बुरा परिवार समाज के लिये अभिशाप होता है। क्योंकि समाज में परिवार की भूमिका प्रदायक की होती है। परिवार सदस्यों का समाजीकरण करता है, साथ ही सामाजिक नियंत्रण का कार्य करता है क्योंकि सभी नातेदार सम्बन्धों की मर्यादा से बंधे होते हैं। एक अच्छे परिवार में अनुशासन और आजादी दोनों होती हैं।

परिवार मनुष्य के जीवन का बुनियादी पहलू है। व्यक्ति का निर्माण और विकास परिवार में ही होता है। परिवार मनुष्य को मनोवैज्ञानिक सुरक्षा प्रदान करता है। व्यक्तित्व का विकास करता है। प्रेम, स्नेह, सहानुभूति, परानुभूति आदर सम्मान जैसी भावनाएँ सिखाता है। धार्मिक क्रियाकलाप सिखाता है। धर्म स्वयं में नैतिक है। अतः बच्चा नैतिकता सीख जाता है। बच्चों में संस्कार परिवार से ही आते हैं। इसलिये ही प्लेटो कहते हैं कि परिवार मनुष्य की प्रथम पाठशाला है।

इस तरह परिवार का समाज में विशेष महत्त्व है किन्तु इससे भी अधिक महत्त्व भारतीय समाज में संयुक्त परिवार का रहा है। संयुक्त परिवार में प्रत्येक व्यक्ति की जिम्मेदारी होती है। स्वास्थ्य सम्बन्धी समस्या हो या आर्थिक सामाजिक सुरक्षा, सभी लोग मिलकर वहन करते हैं। कोई अकेला व्यक्ति पेशानी नहीं उठाता। इससे किसी एक व्यक्ति पर तनाव नहीं बढ़ता। पूरा परिवार एक शक्ति ग्रह की भांति होता है। जो सामाजिक सुरक्षा का कार्य करता है। संगठित होकर रहने से मुहल्ले में भी झगड़े कम होते हैं। संयुक्त परिवार में बच्चे कैसे बड़े हो जाते हैं पता ही नहीं चलता। बच्चों के खेलने के लिये परिवार के सदस्य ही उनके दोस्त बन जाते हैं। मनोरंजक गतिविधियां जैसे त्यौहार उत्सव आदि होते रहते हैं। उन्हें दादा दादी आदि का अपार प्यार मिलता है। इसलिये परिवार को प्यार का मंदिर कहा जाता है। प्यार के साथ-साथ उनका ज्ञान अनुभव अनुसाशन आदि बहुत कुछ बच्चों को मिलता है। ऐसे में बच्चों का उचित शारीरिक और चारित्रिक विकास

\*बाबा साहब भीमराव अम्बेडकर, बिहार विश्वविद्यालय मुजफ्फरपुर (बिहार)

होता है। जबकि एकाकी परिवार में कभी-कभी बच्चे को माँ बाप का प्यार भी नहीं मिल पाता। बच्चों को संस्कारवान बनाने, चरित्रवान बनाने एवं उनके नैतिक विकास में संयुक्त परिवार का विशेष योगदान होता है जो कि एकाकी परिवार में कभी संभव नहीं है।

संयुक्त परिवार में कौशल भी सिखाया जाता है। साम्य श्रम विभाजन देखा जा सकता है। कार्य लिंग और आयु के आधार पर बँटा होता है। परिवार एक नियामक संस्था भी है। जो घर में सभी सदस्यों को अनुशासित और नियंत्रित रखती है। इसे तानाशाही भी कहते हैं। घर का मुखिया होता है जो चुना नहीं जाता किन्तु वह परिवार का वरिष्ठतम सदस्य होता है। वही नियामक होता है। किन्तु मुखिया का कार्य बहुत कठिन होता है। क्योंकि वही पूरे परिवार को एक सूत्र में बाँधे रखता है।

जरूरत पड़ने पर उचित दंड भी देता है। बदले में अक्सर उसे बुराइयाँ भी मिलती है। इसलिये कहा जाता है कि परिवार का मुखिया होना कांटों भरा ताज पहनने जैसा है। मजूमदार परिवार को लघु राज्य कहते हैं। मनु स्मृति में भी पिता को राजा और माता को रानी बताया गया है।

संयुक्त परिवार में झगड़ों की प्रकृति सामान्य और आपसी होती थी। जिनको बुजुर्ग लोग घर में ही सुलझा लेते थे। क्योंकि संयुक्त परिवार स्वयं में नियामक था। लेकिन आज झगड़े व्यक्ति होते जा रहे हैं। एकाकी परिवार में पति पत्नी के झगड़े बढ़ते ही जा रहे रहें हैं। एकाकी परिवार में समाधान के लिये कोई बुजुर्ग नहीं होता इसलिये झगड़े घर से बाहर निकल रहे हैं। पारिवारिक विवादों को निपटाने के लिये विभिन्न स्तर पर परामर्श केंद्र बनाये गये हैं। बावजूद इसके पारिवारिक झगड़े बढ़ते ही जा रहे हैं। इसके अनेक कारण हो सकते हैं जैसे—अहंकार, बढ़ता सुखवाद, बिना कर्तव्य के अधिकार, नारी सशक्तिकरण, समय और आपसी संचार की कमी आदि।

प्रत्येक व्यक्ति की इच्छा होती है की उसकी वृद्धावस्था सुचारु रूप से गुजरे उसे कोई तकलीफ न उठानी पड़े। यह सब एक संयुक्त परिवार में ही संभव है। किन्तु बदलते समय के साथ-साथ परिवार का स्वरूप भी बदल रहा है। आधुनिक परिवारों में मुखानुमुख सम्बन्ध कम हो रहे हैं। परिवार में मुखिया का महत्त्व कम हो रहा है। पारस्परिक सम्बंधों की अपेक्षा आर्थिक महत्त्व बढ़ता जा रहा है। सम्बंधों में औपचरिकता बढ़ती जा रही है। व्यक्तिवाद बढ़ रहा है। दूसरे के प्रति भावनाएँ कम हो रही हैं तथा जीवन अधिक यांत्रिक होता जा रहा है। फिर भी व्यक्ति व्यस्त है। बुजुर्गों की उपेक्षा की जा रही है। उनके प्रति सम्मान एवं कर्तव्य घट रहा है। बुजुर्गों को बोझ समझा जा रहा है। उनकी बातों को अतार्किक कहकर अस्वीकार किया जा रहा है। बढ़ती महत्वाकांक्षा के कारण संयुक्त परिवार एकाकी परिवार में टूट रहे है। संयुक्त परिवार के विखंडन से सर्वाधिक हानि बुजुर्गों को ही होती है। आज अधिकांश बुजुर्ग या तो किसी एक कोने में अकेलापन भोग रहे होते हैं या नौकरों के सहारे अपना जीवन काट रहे हैं। क्योंकि बेटों को स्वयं के कार्यों से फुर्सत नहीं है। कुछ बुजुर्ग तो विदेश गये अपने बेटे के वापस आने की आश में जीवन गुजार देते हैं। पहले व्यक्ति का उद्देश्य परिवार का सुख होता था। किन्तु आज व्यक्ति स्वयं के हित में सोचता है। वह अधिक उपयोगितावादी और सुखवादी हो गया है। जिस कारण से संयुक्त परिवार टूट रहे हैं।

विवाह स्वरूप में परिवर्तन से भी संयुक्त परिवार में सामंजस्य कम हुआ है। प्रेम विवाह और अंतरजातीय विवाह बढ़ रहे हैं। परिवार एक परम्परागत संस्था है। वह परिवर्तन जल्दी स्वीकार नहीं करती। इसलिये परिवार

विवाह कि इन रूपों को बहुत ही कम स्वीकार करते हैं। आज ऑनर किलिंग की घटना देखी जा सकती है जो कि इसी का परिणाम है।

नारी की स्थिति भी बदल रही है। महिलायें कामकाजी अधिक होती जा रही हैं। परिवार की सेवा की अपेक्षा आर्थिक कार्यों को अधिक महत्व दिया जा रहा है। घर में बच्चा आया के हाथों में है। उसे माँ बाप का प्यार नहीं मिल पाता। इस तरह आधुनिक समय में परिवार संरचनात्मक और प्रकार्यात्मक रूप से परिवर्तित हो रहा है। दादा दादी की नैतिक कहनियाँ अब नहीं सुनायी देतीं। घर से अंताक्षरी जैसे खेल समाप्त हो चुके हैं। इनका स्थान म्यूजिक सिस्टम और इंटरनेट ने ले लिया है। बच्चे नेट पर उपलब्ध सैकड़ों विडिओ गेम्स में व्यस्त हैं होकर तनाव ग्रस्त हैं। व्यक्ति ने सोशल मीडिया पर अपना आभासी समाज बना रखा है। और यह समाज घर तक आ रहा है। प्रेम, ईर्ष्या, घृणा जैसे भाव भी इसमें देखे जा सकते हैं। आभासी समाज वास्तविक समाज पर हावी हो रहा है।

आज का परिवार संविदात्मक परिवार अधिक दिखायी दे रहा है। परिवार में सर्व हित की भावना अब नहीं देखी जाती। संयुक्त परिवार में संघर्ष वधू और परिवार के बीच थे। एकाकी परिवार में ये संघर्ष पति पत्नी के बीच आ गये हैं। भविष्य के संघर्ष माता पिता और उनके बच्चों के बीच होंगे। भाई बहन के बीच संघर्ष जारी है। उत्तराधिकारी के मामले इसी की देन हैं।

लेकिन प्रश्न ये है कि संयुक्त परिवारों में इतना विखंडन एवं परिवर्तन आखिर क्यों हो रहा है? तो इसके अनेक कारण हो सकते हैं। जैसे—आधुनिकता, नगरीकरण, राजगार हेतु पलायन, महत्वाकांक्षी, स्वार्थवाद, घमंड, विचारों में असमानता आदि।

नगरीकरण परिवारों को नष्ट कर रहा है। व्यक्ति रोजगार हेतु नगरों के छोटे-छोटे घरों में रहने के लिये विवश है। उसके पास उतनी जगह नहीं है कि वह पूरे परिवार को साथ रख सके। बढ़ती महत्वाकांक्षा ने संयुक्त परिवारों को विखंडित किया है। लोग अपना भविष्य बनाने के लिये परिवार से दूर प्रदेश अथवा विदेश चले जाते हैं। अधिक सुख सुविधाएं मिलने के कारण वो वही बस जाते हैं। किन्तु परिवार की संरचना और प्रकार्य में जो परिवर्तन आज हम देख रहे हैं उसके लिये मुख्य कारण आधुनिकता है। भारत में आधुनिकता का अर्थ पाश्चात्य सभ्यता से लगाया जाता है अर्थात् यूरोप और अमेरिका की सभ्यता से। आज लोग वहाँ के रहन सहन, खानपान तथा पहनावे को अपनाकर स्वयं को आधुनिक अनुभव करते हैं। अंग प्रदर्श को आधुनिकता से जोड़ दिया गया है। पहनावे को लेकर मीडिया पर जंग छिड़ी हुई। पाश्चात्य सभ्यता मूल्य रहित है। जबकि भारतीय समाज आज भी सांस्कृतिक मूल्यों से जुड़ा हुआ है। लोगों की विचारधारा भिन्न-भिन्न है इस कारण परिवार में विखंडन एवं संघर्ष बढ़ता जा रहा है।

लेकिन देखा जाये तो आधुनिकता गलत नहीं है। गलत वो लोग हैं जो आधुनिकता को गलत रूप से परिभाषित करते हैं। आधुनिकता के अनेक लाभ हैं। आज तकनीकी संचार मध्यम से सम्बन्धों में निकटता आयी है। यदि हम वस्तु या व्यक्ति को लेकर मध्यम मार्ग अपनायें तो परिवार को विखंडित होने से बचाया जा सकता है। इसके लिये हमें अपनी सहनशीलता बढ़ानी होगी और इच्छाएं थोड़ी सीमित करनी होंगी। परिवार की खुशी में ही अपनी खुशी होती है यह बात हमें समझनी पड़ेगी और दूसरों को भी समझानी पड़ेगी।

रिश्ते कच्चे धागों की भांति बहुत नाजुक होते हैं जो एक बार टूटने पर मुश्किल से जुड़ते हैं। फिर भी उनमें गांठ पड़ ही जाती है। कवि रहीम उचित कहते हैं कि **“रहिमन धागा प्रेम का मत तोड़ो चटकाय टूटे पे फिर न जुड़े-जुड़े गांठ पर जाये।”** अतः परिवार विखंडित न हो इसके लिये जरूरी है कि आपसी मित्रता सद्भावना, आदर, सम्मान सेवा भाव एवं विश्वास बना रहे। परिवार में संघर्ष समाप्त करने के लिये क्षमा सबसे बड़ी औषधि है।

कुछ विद्वान कहते हैं कि आधुनिकता, नगरीकरण और बढ़ते उपभोक्तावाद के कारण परिवार समाप्त हो रहे हैं। लेकिन यह गलत धारण है क्योंकि परिवार एक ऐसी संस्था है जो विवाह पर आधारित है और विवाह संतान उत्पत्ति से सम्बंधित है। अतः परिवार मनुष्य की मूल भावनाओं से जुड़े हुए हैं। अतः परिवार कभी समाप्त नहीं हो सकते। स्वरूप बदल सकता है। दुर्भावनाएं बढ़ सकती हैं। अर्थात् संरचना बदल सकती है किन्तु प्रकार्य वही रहेंगे। परिवार बच्चों को जन्म देंगे ही। उनका पालन पोषण करेंगे ही तथा सामाजिक सुरक्षा प्रदान करते रहेंगे।

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# भारतीय महिलाओं को वोटिंग अधिकार क्यों नहीं देना चाहते थे अंग्रेज?

प्रकाश\*

अमरीका को देश की महिलाओं के समान वोटिंग अधिकार देने में 144 साल लग गए। ब्रिटेन को महिलाओं को वोट देने का अधिकार देने में लगभग एक सदी का समय लगा।

स्विट्ज़रलैंड के कुद इलाकों में महिलाओं को वोट दे सकने का अधिकार 1974 में जाकर मिला। लेकिन भारतीय महिलाओं को वोट देने का अधिकार उसी दिन मिल गया था जिस दिन इस देश का जन्म हुआ था।

साल 1947 में भारत की वयस्क महिलाओं को किस तरह चुनाव में वोट देने का अधिकार मिला। गहन शोध के बाद लेखिका डॉक्टर ओर्नित शनि ने इस विषय पर एक किताब लिखी है। वो कहती हैं कि करीब 10 लाख लोगों की मौत और एक करोड़ 80 लाख लोगों के घरों की तबाही के लिए जिम्मेदार बंटवारे की आग में झुलस रहे एक देश में ये फ़सला लिया जाना उस वक्त **“किसी भी औपनिवेशिक राष्ट्र के लिए एक बहुत बड़ी उपलब्धि थी।”**

## महिलाओं को नहीं देना चाहते थे अधिकार

आजाद भारत में वोटों की संख्या पांच गुना तक बढ़कर करीब 17 करोड़ 30 लाख तक पहुंच गई थी। इसमें से करीब 8 करोड़ यानी आधी आबादी महिलाओं की थी। इनमें से करीब 85 फीसदी महिलाओं ने कभी वोट ही नहीं दिया दिया। दुर्भाग्य करीब 28 लाख महिलाओं के नाम वोटर लिस्ट से हटा देने पेड़े क्योंकि उन्होंने अपने नाम ही नहीं बताए।

अपनी किताब **‘हाओ इंडिया बिकेम डेमोक्रेटिक : सिटिज़नशिप ऐट द मेकिंग ऑफ़ द यूनिवर्सल फ्रेंचाइज़ी’** में डॉ शनि ने औपनिवेशिक शासन के दौर में महिलाओं के मताधिकार के विरोध के बारे में लिखा है।

डॉ शनि लिखती हैं कि ब्रिटिश अधिकारियों ने ये तर्क दिया कि सार्वभौमिक मताधिकार **“भारत के लिए सही नहीं होगा।”** ब्रिटिश शासन के दौरान भारत में चुनाव सीमित तौर पर होते थे जिसमें सामुदायिक और व्यावसायिक धाराओं के तहत बांटी गई सीटों पर खड़े उम्मीदवारों के लिए कुछ वोटों को ही मतदान करने की इजाज़त थी।

शुरुआत में महात्मा गांधी ने वोटिंग का अधिकार पाने में महिलाओं का समर्थन किया। उनका कहना था कि **“औपनिवेशिक शासकों से लड़ने के लिए उन्हें पुरुषों की मदद करनी चाहिए।”**

इतिहासकार गेराल्डिन फ़ोर्ब्स लिखती हैं कि भारतीय महिला संगठनों को महिलाओं को मतदान का अधिकार पाने के लिए एक मुश्किल लड़ाई लड़नी पड़ी थी।

साल 1921 में बाम्बे और मद्रास **(आज की मुंबई और चेन्नई)** पहले प्रांत बने जहां सीमित तौर पर महिलाओं को वोट देने के अधिकार दिए गए। बाद में 1923 से 1930 के बीच सात अन्य प्रांतों में भी महिलाओं को वोटिंग का अधिकार मिला।

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\*मगध विश्वविद्यालय बोध गया (बिहार)

डॉ. फोर्ब्स अपनी किताब 'वूमैन इन मॉडल इंडिया' में लिखती हैं कि ब्रितानी हाउस ऑफ़ कॉमन्स ने महिलाओं के लिए वोटिंग के अधिकार की मांग करने वाले कई भारतीय और ब्रितानी महिला संगठनों की मांग को नज़रअंदाज़ किया। महिलाओं से भेदभाव और उनकी पर्दे में रहना इस फ़ैसले के पीछे उनकी आसान दलील थी।

### अधिकार से वंचित करने की कई दलीलें थीं

डॉ फोर्ब्स लिखती हैं, *“साफ़ तौर पर ब्रितानी शासकों ने अल्पसंख्यकों के अधिकार के तौर पर केवल पुरुष अल्पसंख्यकों को ही अधिकार देने का वादा किया। महिलाओं के मामले में उन्होंने कुछ महिलाओं के अलग-थलग होने के बहाने, पूरी महिलाओं को उनका हक देने से इनकार कर दिया।”*

औपनिवेशिक प्रशासकों और विधायकों दोनों ने ही मताधिकार की सीमाओं को बढ़ाने का विरोध किया था। डॉ. फोर्ब्स के अनुसार वोटिंग का विरोध करने वाले *“महिलाओं को कमतर आंकते थे और सार्वजनिक मामलों में उन्हें अक्षम मानते थे।”*

कुछ लोगों का कहना था कि महिलाओं को वोट देने का अधिकार देने से पति और बच्चों की उपेक्षा होगी। वो लिखती हैं कि *“एक सज्जन ने तो यहां तक तर्क दिया कि राजनीतिक काम करने से महिलाएं स्तनपान कराने में असमर्थ हो जाएंगी।”*

महिला अधिकारों के लिए लड़नेवाली मृणालिनी सेन ने 1920 में लिखा था, “ब्रितानी सरकार के बनाए सभी क़ानून महिलाओं पर लागू होते थे” और अगर उनके पास संपत्ति है तो उन्हें टैक्स भी देना होता था। लेकिन उन्हें वोट देने का अधिकार नहीं था।

वो कहती हैं, *“ये कुछ इस प्रकार था कि मानो ब्रितानी शासक महिलाओं से कह रहें हों कि न्याय पाने के लिए अदालत का दरवाज़ा खटखटाने की बजाए वो खुद ही स्थिति से निपटें।”*

भारत के अख़िर औपनिवेशिक क़ानून, भारत सरकार अधिनियम, 1935 के तहत देश के 3 करोड़ लोगों को वोट देने का अधिकार दिया गया। ये देश की कुल वयस्क आबादी का पांचवां हिस्सा था। इसमें महिलाओं की संख्या कम थी।

### पुरुषों पर निर्भर थी महिला की पात्रता

बिहार और उड़ीसा प्रांत (*उस दौर में ये दो राज्यों एक ही प्रांत में आते थे*) कि सरकार ने मतदाताओं की संख्या कम करने और महिलाओं से मतदान का अधिकार छीनने की कोशिश की।

डॉ शनि लिखती हैं कि सरकार का मानना था, *“अगर महिला तलाक़शुदा या विधवा है या उसके पास संपत्ति नहीं है तो उसका नाम मतदाता सूची से हटा दिया जाना चाहिए।”*

लेकिन जब अधिकारी भारत के पूर्वोत्तर में बसे खासी पहाड़ियों में उन समुदायों के संपर्क में आए जहां मातृसत्ता को माना जाता है, तो उन्हें महिलाओं के मामले में एक अपवाद देखने को मिला। इस समुदाय में संपत्ति महिलाओं के नाम पर होती है।

अलग-अलग प्रांतों ने भी महिलाओं के नाम शामिल करने से संबंधित अपने-अपने नियम बनाए। मद्रास में अगर कोई महिला पेंशनधारी विधवा थी, किसी अधिकारी या सैनिक की मां थी या उसके पति टैक्स देते थे या संपत्ति के मालिक थे तो उसे मतदान करने का अधिकार दिया गया।

देखा जाए तो वोट देने की महिला की पात्रता पूरी तरह से उसकी पति की संपत्ति, योग्यता और सामाजिक स्थिति पर निर्भर थी।

डॉ. शनि बताती हैं, *“महिलाओं को वोट देने का अधिकार देना और उन्हें सही मायनों में वोटर लिस्ट में लेकर आना औपनिवेशिक शासन में काम कर रहे नौकरशाहों की कल्पना से परे था।”*

*“इसका एक कारण उस वक्त की विदेशी सरकार का यहां की अशिक्षित जनता में भरोसे की कमी और गरीबों, ग्रामीण और अशिक्षितों को अधिकार देने के संबंध में उनकी नकरात्मक सोच का नतीजा थी।”*

### आज़ाद भारत में बदले हालात

लेकिन जब आज़ाद भारत ने ये तय किया कि वो देश के वयस्कों को वोट करन का यानी अपनी सरकार खुद चुनने का अधिकार देगी तो चीजें बदलने लगीं।

डॉ. शनि लिखती हैं, *“मतदाता सूची तैयार करने का काम नवंबर 1947 में शुरू हुआ। साल 1950 की जनवरी तक जब भारत को उसका अपना संविधान मिला तो उस वक्त तक सार्वभौमिक मताधिकार और चुनावी लोकतंत्र की सोच पुख्ता हो चुकी थी।”*

लेकिन साल 1948 में जब मसौदा मतदाता सूची की तैयारी की बारी आई तो उसमें अनेक समस्याएं थीं।



कुछ प्रांतों के अधिकारियों ने महिलाओं के नामों को लिखने में काफी दिक्कतें पेश आने के बारे में बताया। कई महिलाओं ने अपना नाम बताने से इनकार कर दिया और अपना नाम बताने की बजाए खुद को किसी की पत्नी, मां, बेटा या किसी की विधवा के रूप में पेश किया।

सरकार ने यह स्पष्ट कर दिया कि ऐसा करने की अनुमति नहीं दी जा सकती और महिलाओं का पंजीकरण उनके नाम से ही किया जाएगा।

पूर्व की औपनिवेशिक नीतियों से हटकर भारत सरकार ने कहा कि महिला को किसी अन्य की संबंधी के रूप में नहीं, बल्कि एक स्वतंत्र मतदाता के रूप में पंजीकृत किया जाएगा। सरकार ने मीडिया का



सहारा लेकर इस संबंध में प्रचार करने का काम शुरू किया और महिलाओं को अपनी खुद की पहचान के साथ नाम लिखवाने के लिए उत्साहित किया। महिला संगठनों ने भी महिलाओं से अपील की कि वो अपने हितों की रक्षा करने के लिए खुद मतदाता बनें।

देश की पहली संसद के लिए अक्टूबर 1951 से फ़रवरी 1952 के बीच में हुए चुनावों में मद्रास की एक सीट से चुनाव लड़ने वाले एक उम्मीदवार ने कहा था, **“मतदाता केंद्र के बाहर वोट देने को लिए महिला और पुरुष ग्रामीण धैर्य से घंटों इंतज़ार कर रहे थे। वो कहते हैं कि पर्दे में आई मुसलमान महिलाओं के लिए अलग वोटिंग बूथ की व्यवस्था की गई थी।”** ये अपने आप में एक बड़ी जीत थी।

### आज भी जारी है लड़ाई

बेशक, महिलाओं के हकों की लड़ाई आज भी जारी है। साल 1966 से भारत की संसद के निचले सदन में 33 फ़ीसदी सीटें महिलाओं के लिए आरक्षित करने वाला एक बिल कड़े विरोध के कारण अब तक अटका हुआ है।

आज पहले से कहीं अधिक महिलाएं मतदान कर रही हैं और कभी-कभी पुरुषों से भी अधिक संख्या में वो मतदान कर रही हैं, लेकिन वो चुनाव में उम्मीदवार के रूप में वो कम ही नज़र आती हैं।

2017 में जारी की गई संयुक्त राष्ट्र की एक रिपोर्ट के अनुसार संसद में महिलाओं की संख्या की सूची में 190 देशों में भारत का स्थान 148 है। 542 सदस्य वाले संसद के निचले सदन में सिर्फ 64 सीटों पर ही महिलाएं हैं।

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# बिहार पंचायत राज अधिनियम एवं महिलाएँ

प्रकाश\*

बिहार पंचायत राज अधिनियम 2006 में महिलाएँ के लिए 50% आरक्षण तथा पंचायत चुनाव में लगभग 60% महिला प्रतिनिधियों की जीज से जो पंचायतों का स्वरूप बदला है, उसकी पृष्ठभूमि में अब मात्र यह बताना काफी नहीं होगा कि महिलाओं के सशक्तिकरण में पंचायतों की भूमिका क्या है, बल्कि अब खुद पंचायतों के सशक्तिकरण में महिलाओं की भूमिका क्या होने जा रही है— यह देखना भी बहुत रोचक होगा।

पंचायतों का यह नया एवं बदला हुआ स्वरूप जिला प्रशासन एवं राज्य शासन के लिए भी एक नई चुनौती है और एक नया अवसर भी। चुनौती इसलिए कि प्रशासन को किसी महिला बहुल लोक-संस्था के साथ कार्य करने का कोई अनुभव नहीं। और, अवसर इसलिए कि अब पंचायतों को प्रशासनोन्मुखी से लोकोन्मुखी बनाने में राज्य शासन को बहुत अधिक चेष्टा नहीं करनी पड़ेगी क्योंकि, महिलाएँ अपनी हर भूमिका को परिवार से जोड़कर देखना कभी नहीं भूलतीं।

जीविकोपार्जन और संतानोत्पत्ति की दोहरी भूमिकाओं के बीच खड़ी महिलाओं की माँ, बहन, बेटी, और पत्नी के रूप में पारिवारिक भूमिकाएँ अच्छी तरह परिभाषित हैं जिन्हें वे अनंतकाल से सफलतापूर्वक निभा रही है। इसके अतिरिक्त आज की दुनिया में प्रायः हर क्षेत्र में हर स्तर पर उन्होंने अपनी प्रतिभा, मेहनत और लगन का लोहा मनवाया है। परन्तु, किसी गणतंत्र की संवैधानिक संस्था के बहुमत वाले वर्ग के रूप में अपनी भूमिका निभाने का मौका महिलाओं को पहली बार प्राप्त हुआ है। शायद दुनिया में पहली बार बिहार की महिलाओं को यह अवसर प्राप्त हुआ है। महिलाओं के लिए एक वर्ग के रूप में नया एक अनोखी एवं अचानक आई स्थिति है। इसमें चुनौतियाँ भी हैं और खतरे भी। बड़ी चुनौती यह है कि अपनी पारिवारिक दायित्वों को निभाने के साथ-साथ अब महिलाओं को एक वर्ग के रूप में अपनी सूझ-बूझ एवं निर्णय लेने की क्षमता दिखाती होगी। साथ ही सामुदायिक कल्याण के लिए अपनी कल्पनाशक्ति और प्रतिबद्धता भी सिद्ध करनी होगी। इतनी बड़ी सामाजिक भूमिका निभाने में बहुत सी महिला प्रतिनिधियों का साक्षर न होना थोड़ी मुश्किल तो पैदा करता है, पर रुकावट नहीं, क्योंकि जिस समझदारी एवं सूझ-बूझ की आवश्यकता इस नई भूमिका को निभाने में है उसमें शिक्षित होना एक सहूलियत तो है पर उसका अभाव अड़चन नहीं पैदा कर सकता।

## महिलाएँ पंचायत में बदल सकती हैं स्थिति

पंचायत राज व्यवस्था के सशक्तिकरण में महिला प्रतिनिधिगण वर्ग के रूप में संगठित होकर विभिन्न स्तरों पर बहुत सारे प्रयास का स्थिति बदल सकती है, जैसे—

### ग्राम सभा स्तर पर

1. स्वयं सहायता समूहों को ग्राम सभा की बैठक में अधिक से अधिक संख्या में भाग लेने को प्रेरित एवं उत्साहित का सकती है।

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\*मगध विश्वविद्यालय बोध गया (बिहार)

2. ग्राम सभा द्वारा गठित निगरानी समितियों में महिलाओं को भागीदारी बढ़ाई जा सकती है।
3. ग्राम सभा में कुछ मूलभूत प्रश्न उठाकर, जैसे, गरीबी रेखा से नीचे रह रहे व्यक्तियों का क्रमवार चयन, सड़क निर्माण योजना में स्थान का निर्धारण रोजगार योजना से जोड़कर स्थानीय स्तर पर निर्माण कार्य की परियोजना आदि में महिलाओं को प्राथमिकता दिलवा सकती हैं।
4. ग्राम पंचायत में महिलाओं के लिए शिक्षा, स्वास्थ्य एवं स्वच्छता सम्बन्धी पहल आदि पर चर्चा चला सकती हैं और निर्णायक भूमिका अदा कर सकती हैं।

### ग्राम पंचायत स्तर पर

1. स्थानीय विकास की काग्र योजनाओं का निर्माण करने तथा उनमें महिलाओं की भागीदारी बढ़ाने के उपाय कर सकती है।
2. महिला शौचालय के निर्माण एवं सामान्य स्वच्छता सम्बन्धी प्रयासों में तेजी लाई जा सकती है।
3. सभी बच्चों को स्कूल भेजने का प्रयास सफलीभूत हो सकता है।
4. सामाजिक – सामुदायिक कार्यों में स्त्री-पुरुष समानता के मूल्यों को स्थापित करने में मदद मिल सकती है।

### ग्राम कचहरी स्तर पर

1. अधिक से अधिक मामलों का सौहार्दपूर्ण निपटारा करवाने में मदद कर सकती है।
2. महिलाओं की सखी-सहेली टोली बनाकर सामुदायिक सौहार्द बढ़ाने में मदद कर सकती है।
3. महिलाओं की निगरानी समिति बनाकर विकास कार्यों के अवरोधों को पहचान कर उन्हें दूर करने की पहल का सकती हैं।

### समितियों के स्तर पर

1. ग्राम पंचायतों के परिवार के रूप में सामाजिक शांति समितियां बनाकर सौहार्दपूर्ण वातावरण सृजित कर सकती है।
2. ग्राम पंचायतों को अपना लेखा-जोखा, कागज-पत्र ठीक ढंग से रखने में मदद कर सकती है।
3. ग्राम पंचायतों की आपदा प्रबंधन सम्बन्धी योजनाओं को स्वयं हाथ में लेकर आवश्यक प्रबंध करने के लिए सम्बन्धित व्यक्तियों/विभागों पर दबाव डाल सकती हैं।

### जिला परिषद स्तर पर

जिला परिषद की बैठक की कभी प्रखंड और कभी ग्राम पंचायत स्तर पर आयोजित कर इसे केन्द्रित बनाने में मदद कर सकती है—

1. ग्राम पंचायत-स्तर पर विकासात्मक कार्यों में महिलाओं की भागीदारी को प्रोत्साहन दे सकती हैं। वास्तव में महिला प्रतिनिधि आपस में बैठकर अपने स्तर पर किये जा सकने वाले कार्यों को तीन सूची में बाँट सकती हैं। पुरुष प्रतिनिधियों की तुलना में महिला प्रतिनिधिगण अधिक आसानी से यह काम कर सकते हैं, क्योंकि परिवार चलाने के लिए महिलाएं यही काम सदियों से करती आयी हैं—

1. ऐसे कार्य जिसे पंचायत स्तर पर बातचीत या जनसम्पर्क के आधार पर किया जा सकता है, जैसे भ्रूण-हत्या, बाल विवाह, नशाबन्दी, बच्चों को स्कूल भेजना, शिक्षकों का समय से उपस्थिति, श्रमिकों को संगठित करना आदि। इन कामों को करने में किसी धन एवं बाहरी मदद की आवश्यकता नहीं, केवल संस्थागत लगाव होना चाहिए।
2. ऐसे कार्य जिसे पंचायत स्तर पर स्थानीय संसाधन और सहयोग से किये जा सकते हैं, जैसे-स्कूल भवन का रख-रखाव, स्कूल में पेयजल एवं शौच की व्यवस्था, गंदे नाले का निकास एवं रख-रखाव, समय-समय पर महिलाओं एवं बच्चों के लिए स्वास्थ्य कैम्प, वृक्षारोपण, पर्यावरण का रख-रखाव, बाँध, पुलिया का रख-रखाव आदि।
3. ऐसे कार्य जिसके लिए अधिक संसाधन एवं बाहरी मदद की आवश्यकता पड़ेगी, जैसे- मत्स्य-पालन के लिए पोखरा खुदवाना, गाँव को राज्य-मार्ग से जोड़ने वाली सड़कों का निर्माण, अभिवंचित वर्गों के लिए आवास की व्यवस्था, रोजगार की व्यवस्था, जीविकोपार्जन के लिए प्रशिक्षण, कुटीर-उद्योग का विकास आदि।

तीसरी सूची के बहुत सारे कार्यों को भी वर्तमान में चल रहे केंद्र एवं राज्य सरकारों द्वारा पोषित योजनाओं से जोड़ कर चलाया जा सकता है। इन सभी कार्यों को करते हुए महिला प्रतिनिधियों को यह हमेशा ध्यान में रखना होगा कि जिस प्रकार परिवार पिता के नाम से भले ही जाना जाता हो पर परिवार माँ की सोच और परिवार पिता के नाम से भले ही जाना जाता हो परिवार माँ को सोच और समझदारी पर ही निर्भर करता है उसी प्रकार इस बार की नवगठित पंचायत राज व्यवस्था में महिलाओं की निर्णायक भागीदारी उसे माँ का संरक्षण दे सकती है। पंचायतों के सशक्तिकरण में महिलाओं का यह अभूतपूर्व योगदान होगा।

### अगर हम घर चला सकते हैं तो पंचायत क्यों नहीं?

पुणे जिले के कमलाबाई काकडे नाम की एक महिला ने यह अपनी सहयोगी महिलाओं से सवाल पूछा था। यह महिला 1963 से 1968 तक की अवधि के लिए सरपंच चुनी गयी थी। पहली बार पुणे जिले के बारामती तालुका में निम्बुट नाम गाँव में **“सर्व-महिला पंचायत”** बनी थी। कई महिलाएं चुनाव लड़ने से डर रहीं थीं लेकिन कमलाबाई ने उनकी हिम्मत दिलाई। **“डरना क्यों?”** उन्होंने पूछा, **“अगर तुम घर चला सकती हो तो पंचायत क्यों नहीं चला सकती?”** यह प्रश्न आज हर स्त्री पुरुष को कुछ सोचने पर मजबूर करता है। पांच साल के अंदर निम्बुट की सर्व-महिला पंचायत ने ग्राम पंचायत के कार्यालय भवन का निर्माण किया। स्कूल की मरम्मत की और गान के लिए विद्युत आपूर्ति स्कीम मंजूर की। उन्हें जीप में बैठकर तालुका मुख्यालय में बैठक में भाग लेने का अनुभव भी प्राप्त हुआ और आम सभा में कुर्सी पर बैठकर अपनी राय व्यक्त करने का भी अनुभव मिला। कुछ फलस्वरूप उनको जो आत्मविश्वास प्राप्त हुआ। उससे दूसरी महिलाओं का मार्गदर्शन हुआ जो दूसरे इलाकों में ग्राम पंचायतों चुनावों में भाग लेना चाहती थीं।

महिलाओं के सशक्तिकरण में पंचायत की भूमिका तीन रूपों में की हो सकती है— एक लक्षित वर्ग के रूप में, एक वंचित वर्ग के महिलाओं को तीन तरह से सशक्त कर सकती है—

1. एक लक्षित वर्ग के रूप में महिलाओं के लिए पंचायत विभिन्न योजनाओं के क्रियान्वयन में एवं अपनी योजनाओं में उन्हें प्राथमिकता देकर उनके सशक्तिकरण में सहायक हो सकती है। इसके अलावा, महिलाओं के लिए विशेष रूप से बनी योजनाओं में अधिक्स अधिक महिलाओं को सहभागी बना सकती है, जैसे—राज्य महिला विकास निगम द्वारा चलाई जा रही निम्नलिखित योजनाओं में उन्हें शामिल करके—

1. स्वशक्ति
2. स्वयंसिद्ध
3. स्वावलंबन
4. दीप

ये कार्यक्रम स्वयं सहायता समूह निर्माण द्वारा महिलाओं को संगठित करते हैं एवं बचत को प्रोत्साहित करते हैं। तथा उन्हें प्रशिक्षण के माध्यम से लघु उद्यमी के रूप में भी विकसित होने में सहायता प्रदान करते हैं। इस तरह की योजनाओं के माध्यम से पंचायत के अंदर महिलाओं में एकजुटता लाई जा सकती है एवं उनका सशक्तिकरण किया जा सकता है।

राष्ट्रीय ग्रामीण स्वास्थ्य मिशन के अंतर्गत चलाई जाने वाली योजनाओं में उन्हें शामिल करके, जैसे—

### 1. जननी एवं बाल सुरक्षा योजना

इसके अंतर्गत प्रसवपूर्ण महिलाओं की देखभाल, संस्थागत प्रसव, प्रसव पश्चात देखभाल तथा 9 महीने तक बच्चों का नियमित टीकाकरण शामिल है।

यह योजना जिला स्वास्थ्य समितियों द्वारा चलाई जाती है। इसके अंतर्गत गरीबी रेखा के नीचे आने वाली माताओं को प्रसव के लिए अस्पताल पहुँचाने से लेकर प्रसव पश्चात दवाएं इत्यादि आवश्यक वस्तु खरीदने के लिए आर्थिक मदद का भी प्रावधान है।

### महिला स्वाधार योजना

केंद्र सरकार द्वारा सम्पोषित इस योजना के अंतर्गत निराश्रित, परित्यक्ता, विधवा एवं प्रवासी महिलाओं को प्राथमिकता के आधार पर शामिल किया गया है। इसके अंतर्गत सामाजिक एवं आर्थिक सहयोग की व्यवस्था इस प्रकार है:

1. पुनर्वास के लिए जमीन क्रय हेतु वित्तीय सहायता
2. भवन निर्माण हेतु सहायता
3. भाजन, आश्रय, वस्त्र आदि के लिए सहायता।

### समेकित बाल विकास सेवा कार्यक्रम

यह कार्यक्रम जन्म से लेकर 6 वर्ष तक की उम्र के बच्चों, गर्भवती/शिशुवती महिलाओं और किशोरी बालिकाओं के सम्पूर्ण विकास को बढ़ावा देने के उद्देश्य से चलाया जा रहा है।

## राज राजेश्वी महिला कल्याण बीमा योजना

इस योजना के अंतर्गत 10 से 75 वर्ष के आयु वाली महिलाओं के बीमा का प्रावधान है। इसके तहत घरेलू गृहिणी छात्रायें, घरेलू श्रमिक एवं अकुशल महिला मजदूरों को लाभाविन्त करना है।

इसके तहत व्यक्तिगत एवं समूह स्तर पर महिलाएं बीमा का लाभ उठा सकती हैं। महिलाओं को स्वयं सहायता समूहों को इसका लाभ अवश्य उठाना चाहिए।

## भाग्यश्री बाल कल्याण पॉलिसी

यह पॉलिसी 18 वर्ष की बालिकाओं के लिए सामाजिक सुरक्षा योजना के रूप में लागू की गई है। इस योजना के अंतर्गत माता/पिता की मृत्यु के पश्चात बालिका को 17 वर्ष की उम्र तक एक निर्धारित राशि देने की व्यवस्था है।

एक वंचित वर्ग के रूप में महिलाओं के लिए पंचायत निम्नलिखित के सन्दर्भ में पहल कर सकती है—

1. शिक्षा की व्यवस्था।
2. स्वास्थ्य की देख-रेख।
3. जीविकोपार्जन के समान-अवसर।
4. स्वयं सहायता समूह निर्माण एवं सशक्तिकरण।
5. रोजगार गारंटी योजना के अंतर्गत जीविकोपार्जन के लिए वैसी महिलाएं जिनके पति बाहर गये होने, उनके लिए प्राथमिकता के आधार पर काम।
6. निर्माण योजना के तहत काम करने के समान अवसर।

## एक मानवीय समूह के रूप में महिलाओं को सशक्त करने के लिए पंचायत

1. समान प्रतिष्ठा,
2. समान व्यवहार,
3. समान अवसर तथा
4. समान ध्यान।

देकर उन्हें व्यवहार में बराबरी का दर्जा दिला सकती है। पंचायतों को अपनी सोच, व्यवहार एवं कर्म के स्तर पर, महिला सशक्तिकरण के लिए ये सभी पहल करना परम आवश्यक है।

जब हम पंचायतों तथा अन्य संस्थाओं को सशक्त एवं सफल बनाने में महिलाओं की भूमिका निर्धारित करने की बात करते हैं तो दोनों ही स्थितियों में हम देश की 48.26% और प्रदेश की 47.93% आबादी की बात कर रहे होते हैं।

यह अभूतपूर्व स्थिति है कि पंचायत राज के तीनों स्तर की चारों संस्थाओं में जहाँ लगभग 65% महिलाओं प्रतिनिधि हों वहाँ तो पंचायत को करनी है होगी। इस स्थिति में तो वास्तव में महिला सशक्तिकरण से पंचायतों का सशक्तिकरण स्वमेव होता रहेगा। पंचायत में महिलाओं का ही बहुमत वाला समूह है। और महिलाएं जब समूह में होती हैं तो वे बड़ी से बड़ी कठिनाइयों एवं चुनौतियों का सामना कर लेती हैं।

इसके अलावा, चाहे स्त्री हों यह पुरुष, सभी पंचायत सदस्य एक ही सूत्र से बंधे हैं। वह सूत्र हैं सामाजिक समानता, स्थानीय विकास एवं स्थानीय स्व-शासन।

पुरुष वर्ग विशेषकर निर्वाचित महिला प्रतिनिधियों के परिवार के पुरुष, सदस्यों को महिलाओं की क्षमता वृद्धि में सहायक की भूमिका निभाने की जरूरत है। यह समय मांग है। इसमें महिलाओं के आरक्षण की सार्थकता भी निहित है।

वैसे भी महिलाओं के हितों की रक्षा के लिए समय-समय पर केंद्र सरकार की ओर से अब तक पन्द्रह अधिनियम लागू किये गये हैं। इनकी छाया में महिलाएं मुक्त होकर अपने उत्तरदायित्वों को निभा सकती हैं। आवश्यकता है तो उनके साहस एवं व्यक्तिगत पहल की, जिसके लिए उन्हें सशक्त तो किया जा सकता है पर कदम तो उन्हें ही उठाता पड़ेगा। वे पन्द्रह अधिनियम इस प्रकार हैं:

1. महिला घरेलू हिंसा संरक्षण अधिनियम, 2005
2. हिन्दू विधवा पुनर्विवाह अधिनियम, 1856
3. हिन्दू विधवा पुनर्विवाह (निरसन), अधिनियम, 1983
4. हिन्दू महिला सम्पत्ति अधिकार अधिनियम, 1936
5. चिकित्सकीय गर्भ समापन, अधिनियम, 1983
6. पूर्व गर्भधारण एवं पूर्व-प्रसव नैदानिक तकनीक (लिंग-चुनाव निषेध), अधिनियम, 1994
7. राष्ट्रीय महिला आयोग, 1990
8. मातृत्व लाभ अधिनियम, 1961
9. मुस्लिम महिला (तलाक अधिकार संरक्षण), अधिनियम, 1983
10. मुस्लिम विवाह विघटन अधिनियम, 1939
11. परिवार न्यायालय अधिनियम, 1984
12. दहेज निषेध अधिनियम, 1961
13. अनैतिक व्यापार (निवारण), अधिनियम, 1956
14. महिला अशोभनीय प्रतिनिधित्व (निषेध), अधिनियम, 1986
15. सती प्रथा (निवारण), अधिनियम, 1987

पंचायत के स्तर पर भी इन अधिनियमों के विषय में समुचित जानकारी महिलाओं को मिलनी चाहिए। इसके लिए भी पंचायत को जरूरी उपाय करने चाहिए।

### एक श्रमिक विधवा मुखिया की निर्वाचन के बाद की दिनचर्या की एक झलक (उदाहरण)

सुबह 5 बजे उठाना एवं 5.30 बजे तक	क्रियाकर्म से निवृत्त होकर बच्चों के कलेवा लेकर काम पर जाना।
दोपहर 1 बजे तक	काम से बच्चों को स्कूल से वापस आना
दोपहर 2 बजे तक	खाना-पीना, तैयार होकर पंचायत भवन जाना

दोपहर 2 बजे 4 बजे तक	पंचायत प्रतिनिधियों के साथ पंचायत एवं गाँव के विभिन्न मुद्दों पर बातचीत। पंचायत सचिव के साथ परामर्श बैठक। जरूरी कागजों के विषय में जानकारी। अपराहण 3 बजे ग्राम-सभा की बैठक बुलाने की तारीख पक्की करना एवं बही-खाते के विषय में से 4 बजे तक बातचीत। ग्राम पंचायत द्वारा पारित खर्च की समीक्षा करना। ग्राम पंचायत द्वारा पारित खर्च की समीक्षा करना।
4 बजे शाम से 5 बजे तक	महिलाओं के साथ बातचीत
5 बजे शाम से 6 बजे तक	पंचायत क्षेत्र में मुहल्ले विशेष के लोगों से जाकर मिलना तथा हाल-चाल पूछने के दौरान अगर कोई दिक्कत हो तो उसके विषय में जानकारी लेना। विकास कार्यों में लोगों के सहयोग की बात करना।
6 बजे शाम से 7.30 बजे तक	बच्चों के साथ-बातचीत तथा उनके स्कूल के विषय में बातें करना।
7.30 बजे से 8 बजे तक	मिलने आये लोगों से मिलना तथा हाल-चाल पूछना एवं मिलने के कारण के विषय में जानकारी प्राप्त करना।
8 बजे से सोने तक	बच्चों के साथ भोजन करने के बाद हंसते-बोलते सो जाना।

नोट:—आवकतानुसार दिनचर्या में परिवर्तन की गुंजाइश रहेगी।

### संदर्भ ग्रंथ सूची

1. पंचायती राज विभाग, बिहार सरकार।
2. भारत का संविधान, सुभाष कश्यप।
3. भारत का संविधान, डी.डी.बसु।
4. भारतीय राज व्यवस्था, लूसेंट पब्लिकेशन।
5. बिहार समग्र, नावेलटी एण्ड कंपनी, डा. राजेश कुमार सिंह।



# Promoting Thinking Maps (TMS) Strategy in Teaching Human Digestive System Among the Upper Primary Science Teachers.

Mrs. M.Umamaheswari\*

## ABSTRACT

This action research aims to promote science teaching using thinking maps (TMS) among upper primary teachers. For this action research, 15 science handling upper primary teachers were selected as a sample. Questionnaire for testing Teacher's content knowledge and their perception on thinking maps were constructed, used in pretest and post test. A Module on thinking maps strategy was developed for intervention process. This Module includes eight visual tools that reflect eight basic thinking processes. The module comprises eight visual schematic maps such as circle map, bubble map, double bubble map, tree map, flow map, multi flow map, brace map, bridge map. The investigator constructed 8 maps which explain the human digestive system in form of specific thinking processes namely defining, describing, comparing, classifying, cause and effect, sequencing, part-whole relationship, seeing analogies. The investigator gave training on thinking maps in BRC, Pudhuchathram, Namakkal District. Science teachers actively involved to construct their own thinking maps in charts and presented their TMS during presentation session. The Trained teachers were insisted to use thinking map strategy in their regular class room teaching process and their further follow up activities were tracked during school visits. From the data analysis, it was cleared that there is increase in achievement level after intervention. The pre test score was 45.06 in Q1, 29.33 in Q2 and after intervention the post test score was 72.53 in Q1 and 35 in Q2. The teachers reported that this thinking map strategy enhances their teaching and helps their students learning in simplifying, organizing and in remembering the concepts.

## INTRODUCTION

Thinking Maps are visual tools for learning and include eight visual patterns each linked to a specific cognitive process. Thinking maps are a specific set of 8 formal graphic organizers that are designed to stimulate 8 specific thinking processes, including defining, describing, compare and contrast, cause and effect, sequences, part to whole relationships, classification and analogies. In this action research, the researcher covered the 8 types of thinking maps and how to use it in teaching process. Model thinking map for the topic human digestive system is well designed and provided. Each Thinking Map corresponds to a single thinking process:

1. **Circle Map (Defining in context and brainstorming)**
2. **Bubble Map (Describing using adjectives)**
3. **Double Bubble Map (Comparing and contrasting )**
4. **Tree Map (Classifying and grouping )**
5. **Flow Map (Ordering and sequence)**

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6. **Multi-Flow Map (Analyzing causes and effects)**
7. **Brace Map (Depicting the whole of something and its parts).**
8. **Bridge Map (Seeing analogies)**

## NEED FOR THE STUDY

Biology is generally perceived by students as subject to be memorized, because students think biological knowledge is composed of facts to be memorized, they mainly employ low level thinking skills and only learn facts. The students have naive understandings and could not think multidimensional level. The teacher-centered, memorization based instructional methods, annotated way teaching, blocks students own way of thinking. A bare minimum chance is furnish for the students to think in their own and moreover the student's expressions and their opinions in lessons cannot be determined or challenged. This action research enhance teaching and helps teacher to employ thinking maps in learning climate and would make learning in a meaningful way. Teachers can use Thinking Maps across disciplines to help students make connections to learning.

## DESIGN FOR INTERVENTION

### Objectives

- Guide to make connections in learning by circle map, bubble map, double bubble map, tree map, brace map, flow map, multi flow map, bridge map”
- To foster the organization of ideas, words, and concepts, assists in making meaningful patterns and connections, and facilitates comprehension and retention of new text.
- To serve as an instructional strategy for *how* the content is to be taught.
- Streamline the focus of what the students are supposed to be learning.
- To identify and address the misconceptions of students in learning the concept.

## INTERVENTION PROCESS

### Sample

15 science handling Teachers from Pudhuchathram block of Namakkal district was selected as sample for this study.

### Tool

Questionnaire : 1 composed of 25 questions related to digestion process and organs of digestive system. Among 25 questions, 5 questions related to the digestion in reasoning type and remaining 20 in objective form which designed in a way to test Teacher's subject knowledge.

Questionnaire: 2 represent the Teacher's perception on thinking maps.

## METHODOLOGY

- Constructed and administered pre test and post test Questionnaire.
- Module: A Module on Thinking Map was prepared by the investigator. It defines thinking map and describes the eight thinking forms of visual schematic maps which reflects eight basic thinking processes. This module helps the teacher in their teaching field to enhance learner's abilities, generate and evaluate ideas, collect and arrange information and help to solve learning problems. The concept of digestion and the parts of digestive system in

human, their functions and interconnection relation with other systems in human body were clearly explained in circle, bubble, double bubble, tree, flow, multi flow, bridge and brace maps in a explicit pathway for better understanding.

## INSTRUCTIONAL STRATEGIES

The investigator provides a training programme on this instructional strategy to the science handling teachers in Block resource center of Pudhuchatham. Investigator explains eight fundamental thinking skills, eight visual patterns which links specific thinking process. In addition, the investigator highlights that how TMS, integrates previous and subsequent lessons, drives learning, organizes information, foster simple learning, enhances teaching etc., A Module on thinking maps strategy was framed for intervention process. This Module includes eight visual tools that reflect eight basic thinking processes. The module it comprises eight visual schematic maps such as circle map, bubble map, double bubble map, tree map, flow map, multi flow map, brace map, bridge map, were constructed and explains the human digestive system in form of specific thinking processes namely defining, describing, comparing, classifying, part-whole relationship, sequencing, cause and effect, seeing analogies.

On this session, necessary stationery things, TMS module were provided to the teachers and were asked to construct appropriate thinking maps in groups according to the nature of the content. Providing time will also help the teachers to share and discuss within the groups. Everyone in the group is held responsible and accountable for participating. Finally, Teachers present their constructed map, share their views and enhance their teaching skills.

After this, the teachers were insisted to employ this strategy in teaching for any other content in science and track their student's comprehension, learning performance in regular teaching process. The investigator from their frequent school visits found that thinking map supports teaching learning process.

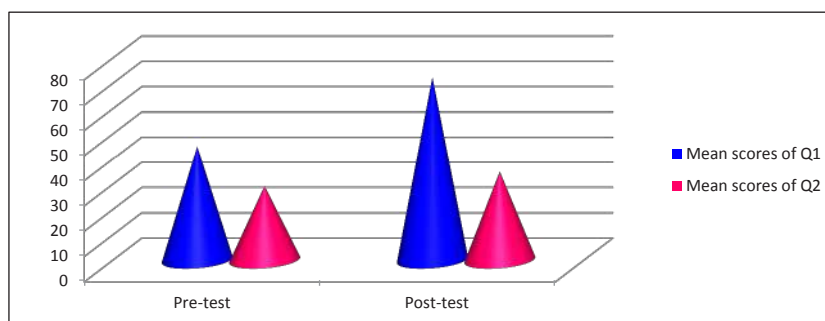
## DATA ANALYSIS AND EVALUATION

**INTERPRETATION OF THE RESULTS:** The result that obtained was interpreted with the objectives of the study.

- The objective "Guide to make connections in learning by circle map, bubble map, double bubble map, tree map, brace map, flow map, multi flow map, bridge map" was achieved by introducing these maps in a specific concept.
- The objective "To foster the organization of ideas, words, and concepts, assists in making meaningful patterns and connections, and facilitates comprehension, retention of new text was achieved by understanding 8 visual tools.
- The objective "To serve as an instructional strategy for *how* the content is to be taught" was achieved by using thinking maps to simplify and organize the concept.

**TABLE 1: Showing the Pre Test and Post Test Mean Scores of Science Handling Teachers In Q1 & Q2.**

Mean scores	Pre-test		Post-test	
	Q1	Q2	Q1	Q2
	45.06	29.33	72.53	35



**GRAPH 1: Showing the Pre Test and Post Test Mean Scores of Science Handling Teachers In Q1 & Q2.**

## FINDINGS OF THE STUDY

The mean score difference between pre test and post test shows that there is increase in achievement level. From the Teacher's response performance, it was clear that the scientific conception as the answer before the instruction had changed their responses to the alternative one. In addition the perception questionnaire pre test and post test shows that there is increase score. But in a casual talk with teachers a hidden fact was exposed that they were unfamiliar about thinking maps and their response in pretest is on the basis of mind map, they have only limited understanding in differences between mind maps, concept maps, thinking maps before intervention. Teachers commented that the information is gleaned through this interventional programme.

## DISCUSSION

This study was conducted to determine the impact of the instructional strategy thinking maps in Human digestive system unit course. Study results showed that there is a positive impact and thinking maps strategy raising the level of scientific knowledge of teachers through the use of strategic thinking maps in the teaching of science.

## RECOMMENDATIONS

In the light of the present results, the researcher recommend on the following:

- Adopting the strategy of thinking maps in teaching all subjects at all grade levels too.
- Making workshops, in-service training programs on thinking maps strategy can train teachers for further enhancement.
- Thinking maps can support the teaching and learning of science in general and specific concepts too.

## CONCLUSION

The Teachers agreed that the maps had successfully helped students develop their thinking processes and their ability to organize ideas, improved the quality and quantity of their writing, and also motivated them to learn. Further, the maps benefited the teachers by helping them organize content and assess student learning. When teachers collect Thinking Maps over time and within

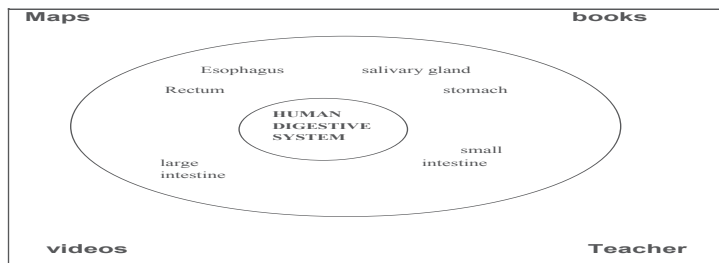
student portfolios, many interesting possibilities emerge. Portfolios enable students and teachers to see how learners are assimilating new knowledge into the big picture of any content area, and how thinking and content knowledge develop incrementally.

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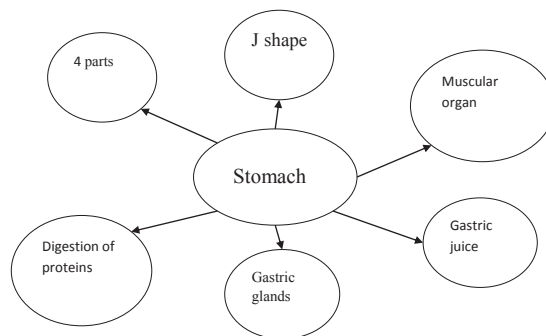
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- Prof. Gamal Hamid Mohamed Mansoor Prof. abdal –Elazeem Mohamed Zahraan, Nahla Esmaieel Hamed Ahmed 2018 Impact of using Thinking Maps in Teaching Algebra on cognitive Achievement among second year preparatory students.
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## MODULE

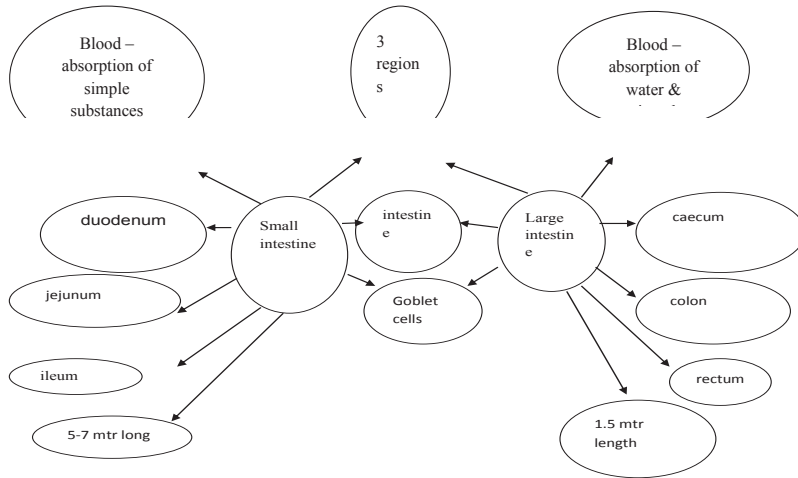
Module includes eight visual tools that reflect eight basic thinking processes. Sample of some model maps is given below which explains the human digestive system.



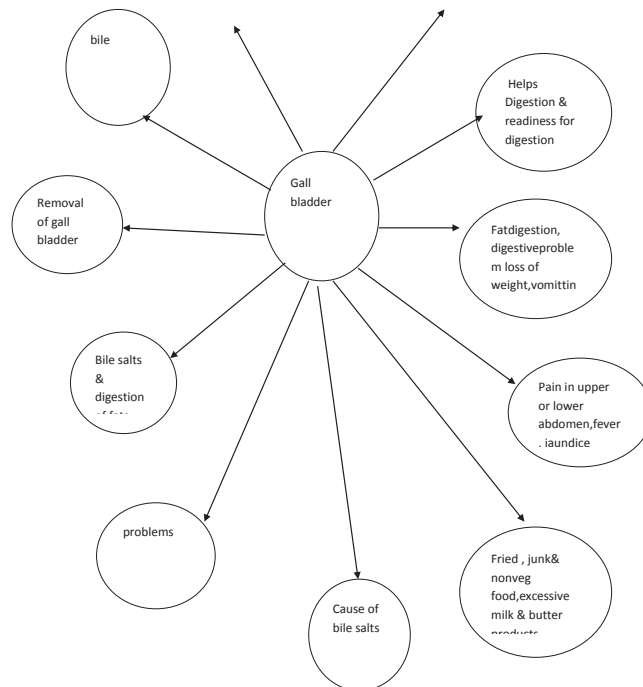
### Circle Map



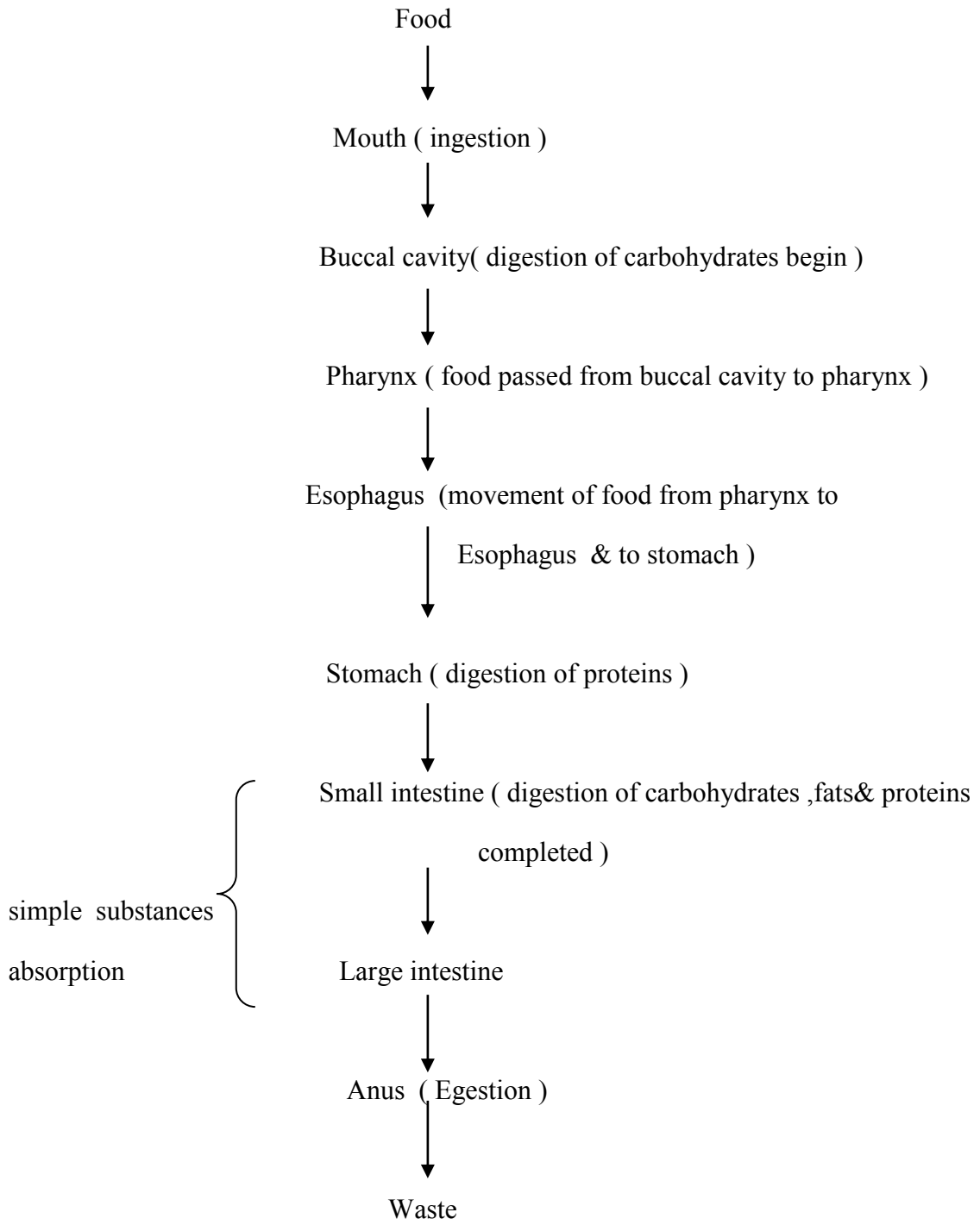
### Bubblemap



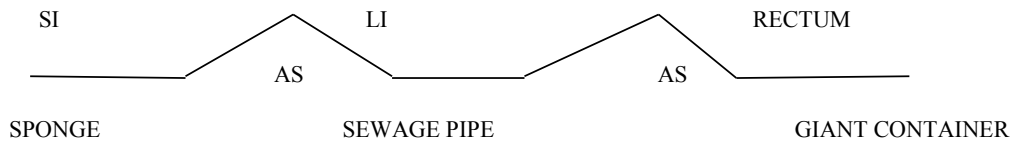
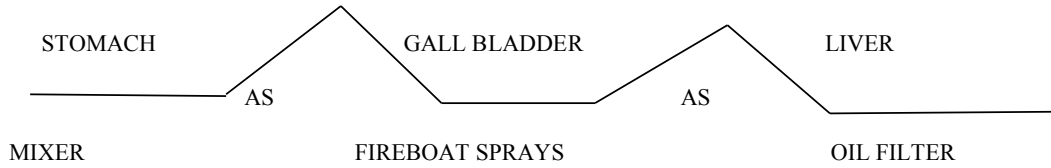
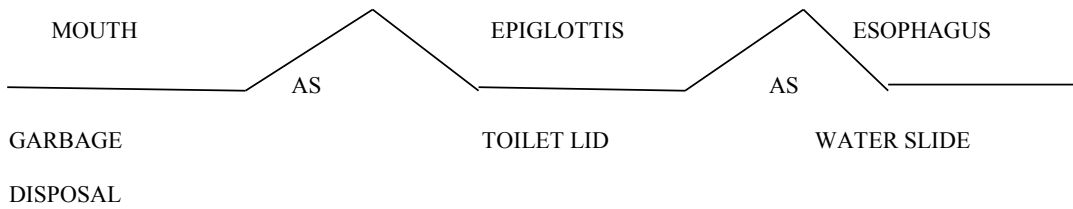
**Double Bubble Map**



**Multiflow Map**

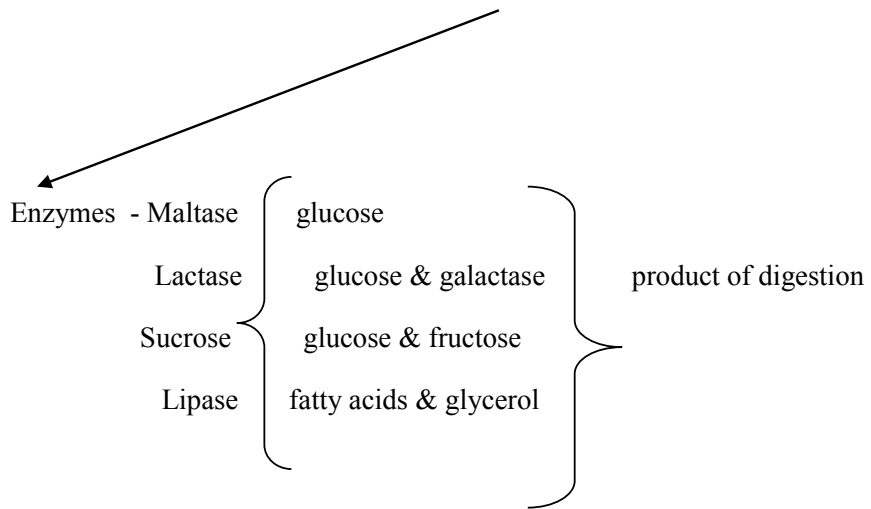


**Flow Map**



**Bridge Map**

Glands — intestinal glands — Succus entricus



**Brace Map**





## Guidelines for Contributors

1. Two copies of manuscripts typed in English on one side of the A4 size paper should be submitted along with an abstract not more than 200 words. The length of a paper including tables, diagrams, illustration etc., should be between 3000 to 5000 words. Papers/articles should be original and unpublished contribution. Papers should be accompanied by a declaration that the material is original, has not been published elsewhere in part or full and the same has not been submitted for publication in any other book or journal of elsewhere. Leave the margin of at least one inch on all sides of paper and one and half inches on left side of the paper. Electronic version of the paper must accompany CD-ROM in MS-Word document format and it should be identical in all respect of the hard copy. Paper without CD will be rejected. Electronic copy must sent to the given E-mail addresses. Article must be in MS-Word in Times New Roman in font size 12. Refused articles/papers will not returned if the self-addressed and Rs. 50/- stamped envelope not attached with paper.
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  - \* **Malik, A.P. (1998).** *Education Policy and Perspective*. New Delhi: Allied Publishers.
  - \* **Majumdar, Ramesh (1997)** "The Role of the Society", *Journal of Educational Views*, 1 (3 & 4), July-October, pp. 1-11.
  - \* **Ganeshan, P.R. (1989).** "Educational Finances in a Federal Government", Seminar on Mobilisation of Additional Resources for Education. New Delhi: National Institute of Economic Planning (mimeo).
  - \* **Saley, Hans (1996).** "Perspective of Education: An Internal View", in Abdul Raza (ed.) *Educational Policy: A Long Terms Perspective*. New Delhi: Concept, for the National Institute of Law and Administration, pp. 70-92

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