CONTEMPORARY MULTI-DISCIPLINARY RESEARCH TREND

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NOTION PRESS

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India. Singapore. Malaysia.

ISBN-13:978-1685861445

Dedicated to Mom and Dad.

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Preface

Contemporary Multi-Disciplinary Research Trend is a book which contains collection of research articles from all disciplines or subjects. Professor, Scholars and professionals have participated to make this book useful to the readers. Readers will get a plethora of knowledge from this book. Contemporary topics from different subjects have been discussed in this book. 21st century is the era of research. A country develops due to its Innovation and Research approach. This book is all about modern research. A plethora of topics from different disciplines have made this book awesome. This book can be a good source to carry out further research in different areas. The editors of this book are well educated and have many years of teaching experience. These editors are writers, novelists, academic books writer and have contributed many articles in well-known journals. Research scholars, academicians, and any people who are working in the field of research and innovation can read this book. All the chapters of this book are well edited and can give you deep knowledge. Interdisciplinary topics are always useful for researchers. This is the reason; universities are allowing scholars to do research in interdisciplinary subjects. UGC is also focusing quality research in higher education.

So we surely, hope that this book will be a masterpiece book in the areas of research.

We would like to thank all the participated authors who have tried their best to make this book useful. We would also like to thank all the editors and proof readers who have helped to make this book awesome.

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1. Technology & Innovation in STS Private Limited: Analyzing Sales and Competition

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Abstract

The SME (Small and Medium Scale Enterprises) sector of India is considered as the backbone of economy contributing to 45% of the industrial output, 40% of India's exports, employing 60 million people, create 1.3 million jobs every year and produce more than 8000 quality products for the Indian and international market. With approximately 30 million SMEs in India, 12 million people expected to join the workforce in next 3 years and the sector growing at a rate of 8% per year, Government of India is taking different measures so as to increase their competitiveness in the international market[1].

1. Introduction

One such SME that was incorporated on 22nd May 1996 is STS Pvt. Ltd. (Sanjay Technical Services Pvt. Ltd.)[2]. It is classified as a Non-Govt company and is registered at Registrar of Companies, Hyderabad. It is a family run company that currently has six industrial units in Jeedimetla Industrial Area, Hyderabad. It's authorized share capital is Rs. 10,000,000 and its paid up capital is Rs. 10,000,000. It is involved in the Manufacture of electricity distribution and control apparatus. This company is classified as a family business run by four directors[3].

1.1 History

The idea of this business started with a motor winding shed in the year 1990 at Jeedimetla; the newly developed industrial area in the outskirts of Hyderabad. Mr. Sanjay and his father started motor

winding repair in a small store room of a relative's manufacturing unit. In the early 1990s; Jeedimetla was becoming a hub for machine tools, welding works and electrical works. So taking this as an opportunity, they also started repairing welding machines that were being used by industries that opened in the area. These services needed sophisticated hand tools and skilled labour. They also started taking up services like internal electrification and other electrical maintenance works. During that time, they hired two helpers in production and this increased to fifteen before the start of LT panel fabrication.

In the year 1992, they rented out a small open space to set up a fabrication shed. They also rented out a welding machine and started sheet steel fabrication works. This was when the competition was very high in the sector in Jeedimetla. Their only strategy was to stick to schedule without compromising the quality. This strategy worked for them even through the tough time in the business. Around this time, the pair was joined by Sanjay's two brothers, they together worked to expand business and started to think of new ways to increase income.

In 1993, they opened a retail store in a rented retail space that sold copper wires, light bulbs, tube lights and various other electrical and mechanical tools and products that were needed by all the industries in Jeedimetla. This retail store was run along with the motor winding works and fabrication works till the year 1996. The company progressed for there on. Below are some of the milestones on the way. In 1994, an executive who worked for Nirup Synchrome Ltd., a company that manufactured pigments and dispersible dyes which are used in polyester textile industry had contacted Sanjay for some steel fabrication work needed in his factory. This executive board saw potential in the brothers and gave them the opportunity to fabricate a control panel that was required in their new factory. Sanjay and his brothers knew nothing about control panels, but they had the support and encouragement of the welding shops and electrical contractors who met them and grew close to them during their welding machine repairing days. These are the people who helped them in making the company's first LT control panel. Unwittingly, they had been networking in the industry circles which helped them in crucial times. All four directors didn't know electrical engineering or LT

Panels up until that point. They took up this opportunity as a challenge and started to equip themselves to make LT Panels.

The Low Tension Control Panels industry was still new in Hyderabad in the 90s. Most of the newly set up industries procured their control panels from companies in Mumbai and Bangalore that were already established. The demand was discernible, all one needed was the courage to start the industry on a large scale. Investments in services like motor winding or fabrication are minimal. While investments in making LT Control panels are much higher and the market in the next decade was precarious. The market of this product solely depended on the introduction of new industries in the state. While the introduction of new industries depended on various factors, but the one major factor is the Government and its policies. The company STS was founded in 1994 and upgraded to Private Limited in 1996. Due to lack of sufficient technology and sufficient capital investment each control panel took longer than the optimum time. A huge investment was made to obtain machinery, equipment and space to make the control panels. Investment was also made to hire skilled engineers, to improve productivity and to also improve the design of the panels.

By the beginning of the 21st century numerous LT Panel orders were delivered to various companies like Dr. Reddy's Laboratories, Divis Laboratories etc. By 2008, the company gained enough turnover and orders to maintain a manpower of 20 employees in the office and 50 production workers in the factory. By the end of 2008, they had enough engineers and expertise for the company to enter into the HT Panel sector. Every panel made by STS Pvt. Ltd. had high quality switchgear and other electrical components. Most of this switchgear was procured from multinational companies like ABB, Siemens etc. The company also acquired a license with ABB in the year 2010. Control panels have a number of complementary electrical products. Two of which are current transformers and potential transformers. STSPL started a Sister Concern Company, STRATON Electricals Pvt. Ltd. in 2012. This company manufacture current transformers and potential transformers. With growth in business, they also increased the number of products and services they were providing. Years of experience in the industry enabled them to

identify products in the market that had potential growth. In 2014, they started manufacturing compact substations and in 2017 they started manufacturing float cum boat battery chargers in STSPL.
Collaborations are key in increasing business, especially when the product you sell is based on engineering and design that has been pioneered by several other big multinational companies. STS Pvt. Ltd became franchise for Siemens (Instrumentation and Electricals Business Unit) in 2015 and L&T Electrical and Automation in 2017.

2. Technology & Innovation:

In the early years STS provided electrical services by making only LT and HT Panels. They started with a generic design and improved it over the years. In this service the design, components and their arrangements were changed according to customer requirements. This service also included shipping, erection on site and personnel for installation on site.

2.1 Low Tension Control Panels

LT Panel is an electrical distribution board that receives power from generator or transformer and distributes the same to various electronic devices and distribution boards. Such panels are used in industries both for internal and external use and, therefore, they are quite rugged to withstand different climatic conditions. In industries, electrical panels that houses various equipment such as bus bars, circuit breakers, meters, etc. play a major role in distributing the power. These panels are distributed over various sections of an industry in order to supply the power to individual installed systems and are connected through cable ducts. In an industrial electric power system, electric power is supplied from either private utilities or public utilities, or both. The supplied voltage is in the range of 11KV, 33KV, 66KV or 132KV. These high voltages are stepped down to a low voltage using step-down transformers. The voltages in the range of 440 volts or below are called as low tension systems. This stepped voltage is further supplied to various panels and equipment through a switchgear arrangement that consisting of electrical switches, circuit breakers, fuses, protection equipment, metering boards, etc. Various transformers supply is given to the LT panels, which acts as a main switching system for entire power distribution scheme and carries the total load demand. All the panels in the distribution system are

ground with a proper grounding & earthing to protect the appliances as well as operating personnel. The switchgear arrangement on each distribution side is housed in metal-enclosed structures called as LT (low tension) panels. These LT panels are responsible for distributing the power to various sub LT panels by receiving it from the transformer. These are rated for 430 V, 3-phase, 50Hz three or four wire system. It is a floor mounted free standing unit and it is totally closed and extensible type. Its design includes all provisions for safety of operation as well as for maintenance personnel. Every panel has a different design and capacity depending on the electrical load of the company procuring it.

2.1.1 Components of an LT Panel

An Air Circuit Breaker(ACB) makes or breaks the circuit either manually or remotely controlled during normal operating condition and break the circuit during fault condition automatically. These can be 3/4 pole type with a rating decided by the load current (or breaking capacity) and can be either drawn out or fixed type. ACBs consist of necessary bus bars to connect the terminals with bolted type neutral links. These are provided with microprocessor systems to enable protection systems like overload, earth fault and short circuits. ACB also gives the necessary indication and metering requirements with the use of CTs, lamps, ammeter, voltmeters, etc. These ACBs are procured by STSPL from either ABB or Siemens depending on the customer requirements. Voltmeters, ammeter and power factor meters in LT panel indicate various parameters and these are protected with MCBs. On all LT panels, indicating lamps (mostly LED lamps) are provided for each phase for indicating live or fault condition. Start and stop push buttons also provided on metering panel to give input commands such as turn ON supply and emergency stop.

High Tension Control Panels

HT Panel is like LT Panel except that it is used for high tension cables. HT panels are designed for higher voltages which mean they have higher level of insulation strength. STSPL makes HT panels of capacities 11kV and 33kV.

Instrument Transformers

In a power system, the currents and voltages are very large. Therefore, their direct measurements are not possible. The solution

is to step -down these currents/voltages with the help of Instrument Transformer. With Instrument transformers they can be metered with instruments of moderate size. Instrument transformers are high accuracy class electrical devices used to isolate or transform voltage or current levels. There are two instrument transformers needed: Current transformers and Potential transformers. Current transformers are used so that ammeters and the current coils of other instruments and relays need not be connected directly to high-current lines. In other words, these instruments and relays are insulated from high currents. Current transformers also step down the current to a known ratio. The use of current transformers means that relatively small and accurate instruments, relays, and control devices of standardized design can be used in circuits. The potential transformer operates on the same principle as a power or distribution transformer. The main difference is that the capacity of a potential transformer is small compared to that of power transformers. Potential transformers have ratings from 100 to 500 volt-amperes (VA). The low-voltage side is usually wound for 115 volts or 120 volts. The load on the low-voltage side usually consists of the potential coils of various instruments, but may also include the potential coils of relays and other control equipment. In general, the load is relatively light. A lot of research and development went into the design of these instrument transformers. STRATON Electricals proved to be one of very few companies that designed their own instrument transformers in the country. Since the company's inception in 2012, many different designs were tested. Most designs passed the testing phase but failed when used by the client. These failures would have been catastrophic for the company's future if Straton Electricals weren't STSPL's Sister concern company. However, years of hard work and investment proved to be fruitful because today they manufacture instrument transformers up to 33kV and the entire power industry of India is aware of the company and its products. These products have become one of the highly reliable products in the country in a short span.

Compact Substations

Outdoor, above-ground substation structures include wood pole, lattice metal tower, and tubular metal structures, although other variants are available. Where space is plentiful and appearance of

the station is not a factor, steel lattice towers provide low-cost supports for transmission lines and apparatus. But, in the 21st century, such large space for substations is not feasible anymore and aesthetics are important to people. There is a discernible demand for substations that are small and pleasant to the eyes. A compact substation is generally an outdoor substation built in a metal enclosure, in which each item of the electrical equipment is located very near to each other to create a relatively smaller footprint size of the substation. These compact substations are most popular in electric vehicle charging stations. STSPL has manufactured compact substations for various commercial buildings in the city and also supplied compact substations internationally.

Battery Chargers

Research and Development in a medium-scale industry is full of risk, but also very essential for innovation. The company gained industry expertise in the field of power distribution systems, but they had to keep up with emerging trends and start manufacturing innovative products. One such product with a high demand and very promising future are battery chargers. They started manufacturing float cum boat battery chargers for industrial purposes under the 'Power Electronics Division' from 2017.

3. Collaborations

Collaborations are key in increasing business, especially when the product you sell is based on engineering and design that has been pioneered by several other big multinational companies. STS Pvt. Ltd acquired license with Siemens (Instrumentation and Electricals Business Unit) in 2015 and L&T Electrical and Automation in 2017. In the electrical industry where competition is very fierce, it is important for a company to meet certain production standards in order to stay afloat in the market. STS understood the importance of licensing and therefore strived hard to meet the production standards to get licenses from top corporations in India. STSPL has also collaborated with various industry leaders in electrical switchgear sector like ABB and Schneider Electric.

Acquiring license with ABB (2011)

ABB is a pioneering technology leader that works closely with utilities, industry, transportation and infrastructure customers to write the future of industrial digitalization and realize value.

Acquiring a license from the company turned out to be very valuable for STS, as it opened up new market opportunities.

Acquired license with SIEMENS (2015)

One of the world's biggest producers of energy-efficient, resource-saving technologies, Siemens is a pioneer in infrastructure and energy solutions, as well as automation and software for industry.

Acquired license with L&T (2017)

Electrical & Automation is a major business portfolio of Larsen & Toubro. The business basket of Electrical & Automation (E&A) contains low and medium voltage switchgear products, electrical systems, energy meters and automation solutions. Its products and solutions cater to industry, utility, building & home, infrastructure and agriculture segments. STS has partnered with L&T for Fully Type tested assembly LT panels (Ti)

By acquiring these STS was able to gain the trust of its buyers. These licenses meant that the company follows certain production standards, thus this increased revenue of the company and proved useful. They collaborated with various industrial leaders in electrical switchgear sector like SIEMENS, ABB, SCHNEIDER and L&T. STS has partnered with Siemens for Fully type tested assembly LT Panels (SIEPAN8PU) and also for HT Panels upto 33kV. STS also has a partnership with ABB for HT panels' up to 33KV.

4. The Central Excise Crisis

On 22nd December 2000 Central Excise Officers raided the STSPL office in Jeedimetla. In India, Central Excise duty is an indirect tax levied on those goods which are manufactured in India and are meant for home consumption. The taxable event is 'manufacture' and the liability of central excise duty arises as soon as the goods are manufactured. It is a tax on manufacturing, which is paid by a manufacturer, who passes its incidence on to the customers. The Central Excise Rules provide that every person who produces or manufactures any 'excisable goods', or who stores such goods in a warehouse, shall pay the duty leviable on such goods in the manner provided in rules or under any other law. Any person or undertaking liable to pay Central Excise must obtain a Central Excise Registration. Separate Central Excise Registration is required for each of the manufacturing premises. In case a manufacturer or producer liable to pay Central Excise does not

obtain Central Excise Registration, a penalty of upto Rs. 10,000 and/or imprisonment of upto 7 years can be imposed. Therefore, it is important for Entrepreneurs involved in manufacturing or production to know about their Central Excise liability and maintain compliance[4].

This Central Excise Registration is exempt for small scale enterprises that do a turnover of less than Rs.50, 00,000. In 2000, STSPL did only Rs. 42, 00,000 of annual turnover in the previous assessment year. Like most novice businessmen, there was no proper check on the documentation of Purchase Order (PO) and Quotations. All records were manual and nothing was computerised. They had carefully maintained the annual business turnover less than Rs. 50, 00,000 to avoid the intense scrutiny of the Central Excise Office that comes with Central excise registration.

The Central Excise Officers claimed that STS Pvt. Ltd. had done a turnover of Rs.80 lakhs in the previous assessment year. They brought around 40 officials to check every document in the office. If they proved their claim they could penalize the company for Rs. 56 lakhs. This turned into a court case that dragged on for a year. This year was the worst year for the company and its future. A lot of investments were made until this point and business was at a snail's pace because of the court case. There were fleeting thoughts of closing everything after the case. In mid-2001, the company remained closed for a month due to lack of work. Employees were paid salaries for no work. In January 2002, they emerged successful in disproving the claim and could continue business but the damage was already done. This incident in the company's history was the one that gave its Directors the courage to fight any odds that came their way. Adversity makes one stronger. The next year they did their Central Excise Registration after achieving a turnover of 55 lakhs and an annual turnover of 97 lakhs the following year. This point in the company's history was a major turning point and there was no looking back after this.

5. Instrument Transformer Failures

A lot of research and development went into the design of instrument transformers. STRATON Electricals proved to be one of very few companies that designed their own instrument transformers in the country. Since the company's inception in

2012, many different designs were tested. Most designs passed the testing phase but failed when used by the client. Every failure product was replaced by Straton despite incurring huge losses by doing so. The failure of these products was very bad for the company's reputation. However, they did not stop trying, they drew funds from STS and made better products and tested them. Years of hard work and investment proved to be fruitful because today they manufacture instrument transformers up to 33kV and the entire power industry of India is aware of the company and its products. These products have become one of the highly reliable products in the country in a short span.

6. Industrial Trends

An increase in the number of new industries is directly reflected on the enquiries that come their way. But set up of new industries is dependent on various factors, and the last two decades have seen drastic highs and lows. In all the lows, the worst was during the partition of Andhra Pradesh. Investors were wary of starting new industries in Telangana and Andhra Pradesh. A lot of control panels delivered during this time were to companies in Tamil Nadu, Maharashtra and overseas. But with the passage of time, investors did come around and start new industries in both the states. Moreover, there are more enquiries from Andhra Pradesh than ever before because of the industrial boom and the major manufacturing plants starting there. In biggest of highs was when the government started encouraging generation of electricity from renewable sources of energy. vA number of solar power plants and wind mills projects have started in the country.

As the Indian economy grows the electricity consumption is projected to reach 15,280 TWh in 2040. With the government's ambitious green energy targets, the sector has become quite attractive for both foreign and domestic investors. It is expected to attract investments of up to US$ 80 billion in the next four years. Government of India has ramped up its previous target to achieve 225 GW of renewable energy capacity by 2022. The boom in renewable energy industry is very profitable for HT Panels, Instrument Transformers and Industrial Battery Chargers sector. STS has already executed orders for various solar and wind energy companies like Greenko Group, ReNew Power Limited, Tata Power Solar, Mytrah Energy etc.

7. Competition:

STS has seen immense competition over the years, but the sector of industries they cater to prefer STS. The reason is that they target large scale Pharmaceutical, Construction, Solar and Wind energy companies. These companies cannot risk quality as they will lose exorbitant amounts of money if production stops even for a day and faulty power distribution can hinder production. They face competition from various manufacturers in local market and from all over India for panel manufacturing sector. In Hyderabad, they have emerged as the most preferred for many major Pharma companies, especially Dr. Reddy's Laboratories. In the case of instrument transformers, they face competition more from established national players than from the local market.

8. Compliments goods and Suppliers

The combination of HT & LT panels with instrument transformers helps the customer with a one stop solution for all their electrical needs. STS has started manufacturing compliment goods to their existing product by starting Instrument transformers. They also started making compact substations which are used in place of substation yards and serve the same purpose but with reduced foot print. Quality of product has always been the company's utmost priority. They use superior quality raw material that is procured from the reliable vendors of the market. Some of these vendors are

- CRCA sheets - Essar/Tata
- Aluminium sheets - Hindalco
- Bus Bars (CU,AL) - Century/Hindalco
- Powders - Akzo Nobel/Jotun
- Cables - Finolex/RR Kabel
- Hardware - Caparo/Unbrako

9. Sales and scope:

The boom in solar and wind energy has already begun and HT Panel enquires from these industries is very high. STS also sees scope in the industrial battery charger industry. This is a power electronic product that is needed in any HT electrical component. There is another very important sector where there is a lot of potential for business. It is the Electric Vehicle business. The charging stations for Electric Vehicles need compact substations. The Government of India is offering $1.4 billion in subsidies to

support the domestic Electric vehicle industry. A lot of electric city buses have already started operating in some metropolitan cities of the country. STS has also got a proposal from a private bus service provider to collaborate and set up charging stations along the Bangalore-Chennai route, which is one of the busiest Bus routes in South India. With so many opportunities to expand business and so many products with market potential STS is looking forward to expanding its product range and reach in the next 5 years.

Table 1: Gross Sales in STS Pvt. Ltd from 2010-2018

Gross Sales in STS Pvt. Ltd from 2010-2018	
Year	**Sales (in lakhs)**
2010-2011	2476.61
2011-2012	3538.30
2012-2013	2865.61
2013-2014	3632.47
2014-2015	4334.83
2015-2016	3801.36
2016-2017	4721.04
2017-2018	5717.89

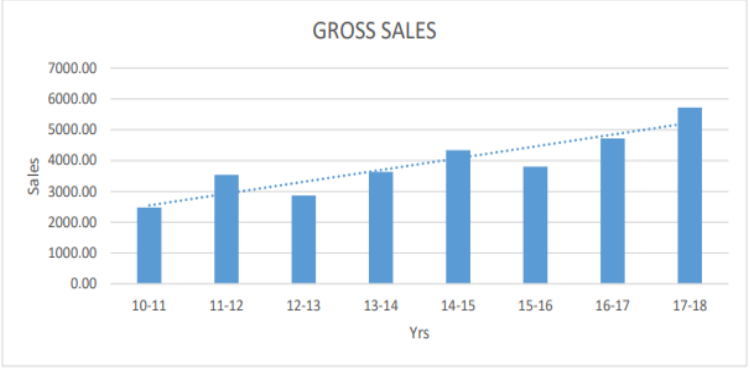

Fig. 1: Gross sales

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2. A Correlation study of Mental Health and Women Empowerment.

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ABSTRACT

The present research work is a descriptive study employing survey method on the topic **"Correlation study of Mental Health and Women Empowerment among Secondary School Female Teachers".**. The objectives of the study were to study the relationship between Mental Health & Women Empowerment, among rural and urban Secondary school Female Teachers and Secondary school Female Teachers working in different types of managements in Mysore Taluk.

The population of the study consisted of 670 Secondary school Female Teachers in Mysore Taluk and the sample consisted of 333 Secondary school Female Teachers. Among them, 63 were from rural secondary schools and 270 were from urban secondary schools. Mental Health and Women Empowerment are the main variables and locality and type of managements are the moderator variables.

The research was conducted in five stages. Firstly, the problem was identified. Secondly, appropriate tools were selected for 1 variable i.e., Mental Health Inventory (Dr. Jagdish & Dr. A.K. Srivastava) and Women Empowerment Assessment Tool was developed by the researcher. Thirdly, data collection was completed by the researcher through administering the tools to Secondary School Female Teachers in Mysore Taluk. Fourthly, scoring was done and data were entered. Lastly the data was analyzed b y using statistical technique – coefficient of correlation, and obtained results were interpreted and discussed.

Findings of the study revealed that there is a significant relationship between Mental Health & Women Empowerment,

among Secondary School Female Teachers in Mysore Taluk. Thus Secondary School Female Teachers in Mysore Taluk have average Mental Health, and High Women Empowerment.

Introduction

A woman always has multiple roles to play and has to deal with complex social relationships. She is supposed to be an almighty mother, pious wife, obedient daughter- in-law, filial daughter, and so on. Apart from these responsibilities, a female teacher has even more to cope with.

The mental health of female secondary school teachers is directly linked to the development of the younger generation. It has been pointed out that, "Education is not only the job of schools and educational departments. It also needs the attention and support of families and society." The following are some suggestions for improving the mental health of female secondary school teachers.

According to one of the surveys, 94 % of the female teachers polled say that they are over-worked. Among them, 76 percent think that too many teaching assignments are the major source of their pressure. It is noted that, 53 percent of them, most of who are young, hope that school teachers will offer more opportunities for the development of their career.

The school environment is an ideal place to begin the work of addressing mental health needs. Not only does the school offer a simple and cost-effective way of reaching youth, but it is also a convenient place where mental health can be linked with other aspects of health, such as physical health and nutrition, and with learning. a positive classroom climate has been found to be one of the most important factors in promoting children good mental health, whether in the prevention of the occurrence of mental health problems, in preventing mental health problems from getting worse, or in reducing the impact of mental health problems on a child's everyday life and ability to learn should be regulated and enhanced by teachers, so to promote mental health of students it is very much necessary to maintain very good mental health status of female teachers.

LOCALE OF THE STUDY: The present study has been conducted at Mysore taluk.

DESIGN OF THE STUDY: It is a descriptive study employing survey method to collect the data from female teachers of secondary school in Mysore taluk only.

PROCEDURE OF THE STUDY:

The present study has been conducted in five stages as follows:

- Identifying the problem & Review of Related Literature
- Construction & selection of the tool
- Administration of the tool & data collection
- Scoring & data entry
- Analysis and data interpretation

STATEMENT OF THE PROBLEM.

"Correlation study of Mental Health and Women Empowerment among Secondary School Female Teachers".

OBJECTIVES OF THE STUDY

1. To study the relationship between Mental Health and Women Empowerment among secondary school female teachers of Mysore taluk
2. To study the relationship between Mental Health and Women Empowerment among secondary school female teachers of Mysore Taluk working in different types of management. (a- Aided, b- Unaided, & c-Government)
3. To study the relationship between Mental Health and Women Empowerment among Rural and urban secondary school female teachers

HYPOTHESES OF THE STUDY

1) There is no significant relationship in the Mental Health and Women Empowerment among secondary school female teachers of Mysore Taluk.

2) There is no significant relationship in the Mental Health and Women Empowerment among secondary school female teachers of Mysore taluk working in different types of management. (a-Aided, b- Unaided, & c-Government)

There is no significant relationship between the Mental Health and Women Empowerment of rural and urban secondary school female teachers.

VARIABLES THE STUDY

Main variables ;-

1) Mental health of secondary school female teachers.

2) Women Empowerment of secondary school female teachers.

Moderator variables:-

a. Locality of secondary schools: urban and

b. Type of management: Government, Aided, Un-aided.

OPERATIONAL DEFINITIONS

Mental Health: "Mental health is defined as a person's ability to make positive self-evaluation, to perceive the reality, to integrate the personality, autonomy group oriented attitudes and environmental mastery." In this study, Mental Health is represented by the scores obtained by administering the tool, Mental Health Inventory developed by Dr.Jagadish & Dr.A.K.Srivastava.

Dimensions of mental health:

1) Positive self-Evaluation (PSE): It includes self-confidence self-acceptance, self-identity, feeling of worth whileness, realization of one's potentialities, etc.

2) Perception of Reality (POR): It is related to perception free from need distortion, absence of excessive fantasy and a broad outlook on the world.

3) Integration of Personality (IOP): It indicates balance of psychic forces in the individual and includes the ability to understand and to share other people's emotions, the ability to concentrate at work and interest in several activities.

4) Autonomy (AUTNY): It includes stable set of internal standards for one's action, dependence for own development upon own potentialities rather than dependence on other people.

5) Group Oriented Attitudes (GOA): It is associated with the ability to get along with others, work with others and ability to find recreation.

6) Environmental Mastery (EM): It includes efficiency in meeting situational requirements, the ability to work, the ability to take responsibilities and capacity for adjustment.

Women Empowerment

Women empowerment is an active, multidimensional process which enables women to realize their full identity and power in all spheres of life. The indicators of women empowerment are as follows:

1. Decision making: Woman's equality in power sharing and active participation in decision making at all levels.

2. Awareness about Home responsibilities: Woman's active participation in house hold things.

3. Awareness about School / Institution responsibilities: Woman's active participation and being aware of institutional activities.

4. Awareness about social status: Woman's active participation in societal activities and aware to gain status in society.

5. Awareness about self:: To know about one's own weakness & strengths, free to care for oneself.

6. Awareness about legal provisions: Awareness about legal judicial system which is more responsive and gender sensitive to women's needs.

7. Awareness about economic Independence: To be aware about the transaction of money and freedom to spend money for a cause.

In the present study, levels of indicators of women empowerment of teachers have been determined by the researcher made tool.

Tools used: The following tools are employed to collect the data.

Mental Health Inventory (M.H.I): Developed by Dr. Jagdish & Dr. A.K. Srivastava

Women Empowerment Assessment Tool: Tool to assess the level of indicators of Women empowerment among women teachers, developed by the researcher.

STATISTICAL TECHNIQUES: For the analysis of the data the following statistical techniques has been employed.

Pearson's Product Moment Correlation

Correlations measure how variables or rank orders are related. Pearson's correlation coefficient is a measure of linear association. In the present study Pearson correlation coefficient has been done to find correlation coefficient between Mental Health, Emotional Intelligence & women Empowerment of urban & rural secondary school female teachers separately.

Objective: 1- To study the relationship between the Mental Health and Women Empowerment among secondary school female teachers of Mysore taluk

Hypothesis (1): - There is no significant relationship in the Mental Health and Women Empowerment among secondary school female teachers of Mysore Taluk.

Table-1 The correlation between Mental Health & Women Empowerment, among Secondary School Female Teachers in Mysore Taluk.

Variables	Pearson Correlation	Sig. (2-tailed)	N
Mental Health & Women Empowerment	.266**	.000	333

As per the Table – 1 there is a significant relationship found among Secondary School Female Teachers in Mysore Taluk in the Mental Health and Women Empowerment (.266), at 0.01 levels. Hence, null hypothesis - 1 is rejected. That means there is association found between Mental Health and Women Empowerment among Secondary School Female Teachers in Mysore Taluk. It might be because female teachers in Mysore taluk are possessing required level of emotional stability to face the conflicts of society, institution and family, and they are aware of rights

and duties of women which make them empowered in the areas of decision making, financial management, to carry out their responsibilities effectively etc. These in turn help them to maintain their mental health.

Objective -2 (a): To study the relationship between the Mental Health and Women Empowerment among secondary school female teachers of Mysore Taluk working in different types of management. (a- Aided, b – Unaided, c – Government)

Hypothesis 2 (a): There is no significant relationship in the Mental Health and Women Empowerment among secondary school female teachers of Mysore taluk working in Aided schools.

Table 2 (a) - The correlation between Mental Health & Women Empowerment, among Aided Secondary School Female Teachers in Mysore Taluk.

Variables	Pearson Correlation	Sig. (2-	N
Mental Health & Women Empowerment	.489**	.000	95

According to the table **2 (a)** there is a significant relationship found among aided Secondary School Female Teachers in Mysore Taluk in the Mental Health and Women Empowerment (.489), at 0.01 levels. Hence, null hypothesis **2 (a)** – is rejected. That means there is association found between Mental Health and Women Empowerment among Aided Secondary School Female Teachers in Mysore Taluk. It might be because the environment of aided schools provides conducive atmosphere for the female teachers to work with the secured feelings which stabilizes their emotional behavior flashing light on the awareness about the status of women in the profession and also at home which makes them empowered to withstand the everyday problems at institution, home & society. Thus emotional intelligence and empowerment level ultimately provides them good mental health.

Objective 2(b); To study the relationship between the Mental Health and Women Empowerment among secondary school

female teachers of Mysore Taluk working in different types of management. (a- Aided, b – Unaided, c – Government)

Hypothesis: 2(b) -There is no significant relationship in the Mental Health & Women Empowerment among secondary school female teachers of Mysore taluk working in Unaided schools.

Table-2(b) The correlation between Mental Health & Women Empowerment, among Unaided Secondary School Female Teachers in Mysore Taluk.

Variables	Pearson Correlation	Sig. (2-tailed)	N
Mental Health & Women Empowerment	.328*	.011	60

From the Table – **2(b)**, it can be observed that, there is a significant relationship found among Unaided Secondary School Female Teachers in Mysore Taluk in the Mental Health and Women Empowerment (.328), at 0.01 levels. Hence, null hypothesis – **2(b)** is rejected. That means there is a significant association found between Mental Health and Women Empowerment among unaided Secondary School Female Teachers in Mysore Taluk. It might be due to the recognized status for women and provides challenging tasks in the aided schools they feel empowered and their conflicts about their strengths and weakness will be reduced stabilizing their emotional intelligence which makes the female teachers be in good mental health status.

Objective: 2(c); To study the relationship between the Mental Health and Women Empowerment among secondary school female teachers of Mysore Taluk working in different types of management. (a- Aided, b – Unaided, c – Government)

Hypothesis: 2(c) - There is no significant relationship between Mental Healt h and Women Empowerment among secondary school female teachers of Mysore taluk working in Government schools.

Table – 2(c) The correlation between Mental Health &

Women Empowerment, among Government Secondary School Female Teachers in Mysore Taluk.

Variables	Pearson Correlat	Sig. (2-tailed)	N
Mental Health & Women Empowerment	.114	.130	178

As per the Table – 4.5.c, there is no significant relationship found among Government Secondary School Female Teachers in Mysore Taluk in the Mental Health and Women Empowerment (.114) at 0.01 levels. Hence, null hypothesis – 2(c) is rejected. The significant relationship is not found between mental health and women empowerment because the present training programs conducted during vacation for teachers may lead them to feel stressed which disturbs their mental health in government schools neglecting the role of women towards their family which creates lack of association between mental health and women empowerment influencing on each other.

Objective: 3 (a): To study the relationship between the Mental Health and Women Empowerment among Rural secondary school female teachers

Hypotheses: 3 (a) - There is no significant relationship between the Mental Health and Women Empowerment of rural secondary school female teachers.

Table: 3 (a) The correlation between Mental Health & Women Empowerment, among Rural Secondary School Female Teachers.

Variables	Pearson Correlation	Sig. (2-tailed)	N
Mental Health & Women Empowerment	.106*	.012	63

The Table: 3(a)shows that there is a relationship found among rural Secondary School Female Teachers in their Mental Health & Women Empowerment (.106) at 0.05 levels, So the null hypothesis 3-a is rejected. Therefore it can be observed that there is a relationship

between Mental Health & Women Empowerment among Rural secondary school female teachers.

Objective: 3(b) To study the relationship between the Mental Health and Women Empowerment among Urban secondary school female teachers

Hypotheses: 3 (b) - There is no significant relationship between the Mental Health and Women Empowerment of urban secondary school female teachers.

Table: 3(b) The correlation between Mental Health & Women Empowerment of Urban Secondary School Female Teachers.

Variable	Pearson Correlation	Sig (2-tailed)	N
Mental Health & Women Empowerment	.152*	.012	270

According to Table: 3(b) there is a significant relationship found among urban Secondary School Female Teachers in the Mental Health & Women Empowerment (.152) at 0.05 levels (2-tailed). Hence, the null hypothesis 3 –is rejected. The positive relationship is found between Mental Health & Women Empowerment, among urban secondary school female teachers. The sound mental health might have made them to analyze the situation & sense the gender discrimination take right decision which have helped them to become empowered.

Michelle Kermode, Helen Herrman, Rajanikant Arole, Joshua White, Ramaswamy Premkumar and Vikram Patel (2007) conducted a study on "Empowerment of women and mental health promotion: a qualitative study in rural Maharashtra, India". In this study they emphasized on the relationship between empowerment of women through income generation and education, reduction of discrimination based on caste and sex, and promotion of individual and community

mental health. This study is supporting the present study results as the mental health of urban secondary school female teachers is correlated with women empowerment.

Conclusion: The present study reveals that, as there is a significant relationship among the rural and urban secondary school female teachers in Mysore taluk between mental health & women empowerment, introduction of guidance cell in the secondary schools to develop mental health, & women empowerment of teachers must be taken up. Through this best society can be build by providing the strongest foundation for the young generation students.

In the field of education female teachers were neglected and being over burdened and under stress. This was influencing the efficiency of the teachers in moulding the personality of their students. Therefore studies should be taken up to flash a ray of light in the field of education through making them aware of the significance of being mentally healthy & empowered. The NPE (1986) emphasizes Women empowerment, hence, an attempt to boost the factors mental health which is contributing to Women empowerment. In the light of these facts the educational implications of the present study are as follows:

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3. Analysis of Natural Eco-friendly Fibre Extracted from Calotropis Gigantea

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Abstract:-

Woolen blankets are used in coldest parts of the universe. In India, most of the hill stations like Himalayas, Nepal, Bhutan and Darjeeling, woolen made fabrics are used in winter season. Wool fabrics are made by kemp of sheep (the hair part of the fleece is called **kemp**). There is occasional opposition for the harming the animals from the "Animal Defenders" like a PETA (People for the Ethical Treatment for Animals) even wool it come on this case. The Scientists and PEAT organization also seeking alternative for the woolen firbre. One of the Indian Scientist discovered the wool fibre from the king's crown flower alias *Calotropis Gigantea is* a flowering plants in the family of *Apocynaceae* to additional of sheep kemp fibre. The discovered calotropis wool is bear up wintrier than sheep kemp woolen. He is born and brought up in weaver's family and graduated in bachelors of Catering and Home science, Masters in travel Management. But his thoughts are running on the weaving. After completion of the Higher Education he became an employer in textile processing plant located at Chennai. While he is working in the plant, seen the dyeing process of the fabrics and then Chemical dye solvents are disposed directly in to the soil and river waters, that he felt unhappy, at the moment his intellectual properties are to produce the non-toxic Eco friendly fabrics.

Key words: *Erukkamchedi, Crown flower, Calotropis Gigantea fabric and Eco-friendly fabric.*

Introduction:-

Calotropis is a genus of flowering plants in the family *Apocynaceae*, first described as a genus in 1810. It is native to southern Asia and North Africa. They are commonly known as milkweeds because of the latex they produce. Calotropis species are considered common weeds in some parts of the world.Common names for the plant include Apple of Sodom, Sodom apple, stabragh, king's crown, rubber bush, and rubber tree Erukkam Chedi. Erukkam Chedi - scientific name *Calotropis Procera* and *Calotropis Gigantea* **.**

Crown flower alias *Calotropis Gigantea*

Role of Crown flower in Spirituality:-

It have long myth behind of this plant in India. Mythological concepts about Erukkamchedi is a symbol of disgrace, Mostly people never grown at their home gardens, because it will propagate on unusual locations like destroyed and smashed buildings and burial places a for crematoriums. Ancients of Hindus believed and won't allow to nurture this erukkamchedi as a symbol of disgrace. Few worship places of Hindus had this plant for worship, in myth had most importance customary for Lord Vinayaga to wear a garland of with this erukkamchedi flower for worshiped on Vinayagar Chaturthi. It has a two classification based on the hue of this bush flower are white

and violet hues.

White shade flower species

White shade flower species only taken for worship of Lord Shiva and Lord Ganesha. Violet species are not accepted for the worship of Spirituality conceptions. Some of the worshipers used erukkamchedi leaf and stem extracted wicks to lighting the lamps will brings protection against darkness and demons sprits and illuminating the good spirits.

Medical uses of ErukkamChedi flower:-

Despite serious safety concerns, calotropis is used for **digestive disorders - including diarrhea, constipation and stomach ulcers** - for painful conditions including toothache, cramps, and joint pain; and for parasitic infections including elephantiasis and worms.

In India we have had as a paranormal medical, a long grate tradition of saints and hermits who evolved our own indigenous systems of healthcare, like Ayurveda, yoga and Siddha. Erukkamchedi Species also had a vital role in siddha. *Calotropis Gigantea* n will grow 12 years without water, even it had two shades of flower are seen in bush and shrubs of *Calotropis Gigantea* and rarely to find the white species, it won't breed on all lands. Green Cropping with *Calotropis Gigantea* grows as a weed in many areas of India, but he thought to purposefully nurturing the plant in harsh environment to produce the fibre. The plant's root system has been shown to break up and cultivate cropland.

It is a useful green manure and will be planted and plowed in before the "real" crop is sown. If we can cultivate the of king's crown plant in 1 acre, may get the fibre from the plant's fruits 350 kg and 500 kg from stem of the plant harvest by this research. Even this erukam chedi cultivating process might easy with plant seeds and the plant piece will began to grow as a new plant independent of the parent, a process known as striking, Even the farmers can generate the extra revenue from to do this erukkam chedi as intercrop between Finger millet, Foxtail millet, Sorghum millet, Pearl millet.

Applications of *Calotropis Gigantea*:-

Since Antediluvian time immemorial, *Calotropis Gigantea* 's applications are functional. Plant stem fibre are strong with durable to use as ropes, it was converted into Bow and Arrow, fishing net for hunting purpose, even this weeds cotton used for pillow before uses of other cottons. Most of the ancient are never worn sandals for walk at everywhere, while the time thorn stabbed on foot, on that spot they were applied this plant white adhesive for recover from wound.

Medicine for poisoning:-

Known facts and unknown thoughts like some of granny's remedy formula are applied this erukkamchedi is used for snakes and scorpions bite poisoning as first-aid. Have to feed of goli gundu (Which means a hard ball typically made of stone, marble, metal, glass etc.) size quantity for snake bite poisoning and for scorpions bites have to feed turkey berry (sundai-kaai) size quantity after that dressing with erukkanchedi leaves on wounded spot for reducing the harm of the poisoning. These are followed for first-aids and informed to doctor for further treatments.

Relieve from wheezing (Asthma):-

In this *Calotropis Gigantea* white flower are very rare species and it is medicine for wheezing. Have to take few white erukkanflowers before remove the center stem from the flower, after that take the petals of the flower and add equal quantity of pepper and clove, make it as a paste form then create as small pepper size pills dry in shades, store in dry place. Whenever the

wheezing (Asthma) increased moment take one pills with water can recover rapidly.

10grms of ginger, 3 no's of white *Calotropis Gigantea* flowers, 6 no's of peppers to crusher it and add ½ letter of water to abscess it into ¼ litter, consume it on daily basis twice in a day will reduce and get relieve from the wheezing.

Textile Fibre:-

He has start-up "Fabrok" in the year of 2015 and tried to extract the fiber from *Calotropis Gigantea* fiber yarn to fabrication in weaving at Tripur with the help of one companion, during at weaving process the fabric of *Calotropis Gigantea* fibre yarn, weavers felt like a cotton. He started to manufacture the calotropis fabric blend with cotton in 70:30 ratio. The fabric was protect the winter more than sheep wool, Continues research is working on to increase the percentage of calotropis fibre fabric. Next process in the fabric is dying of the fabric. Moto is to create Eco friendly dying to dodging the chemical solvents and the natural dyeing for yellow shade used the Mustard. While Calotropis fibre extracted process the waste are not harmful for soil, it become a fertilizer. Even though he made "Arga" an eco-friendly insecticide from the dirt's. One and half litter pesticide is enough for one acre paddy filed, comparatively low cost to other pesticides. Approximately it will cost Rs - 100/- per acre, for chemical compound pesticides are highly expensive, he tested the pesticide in 6 thousand acres and got results from the farmers can get high yields and profits.

He extract the fibre from the Erukkam chedi and produce the fabric for export to European's and United States of America as good response, he expect to market this product worldwide. Water retting and alkali treatment were used to successfully extract novel ligno-cellulosic fibres from Calotropis Gigantea plant bark. The effects of alkali treatment on the chemical composition and morphology of the fibres, as well as their structural, thermal, and tensile characteristics, were investigated. The surface morphology of the fibres became roubled using scanning electron microscopy.

Conclusion:-

Novel ligno-cellulosic fibers were successfully extracted from Calotropis Gigantea n plant bark by usual water retting and

then subjected to alkali treatment. The influence of alkali treatment on the chemical composition and morphology, and structural, thermal, and tensile properties of the fibers was studied. Scanning electron microscopy showed that the surface morphology of the fibers became rough after alkali treatment, due to the significant removal of surface impurities, hemicellulose and lignin from the fibers. Results were supported by chemical analysis and FTIR studies. XRD results indicated an increase of crystallinity and no poly- morphic transformation of the fibers on alkali treatment. Thermal stability was lower whereas tensile properties were higher for alkali treated fibers due to bulk amount of hemicellulose and lignin removal during alkali treatment. The results of the chemical composition and tensile properties were found to be comparable to those of other common ligno-cellulosic fibers, and hence these fibers show some potential as reinforcement in polymer matrix composites. Also, the characterization results validate the promising usage of Calotropis bast fibers for diverse industrial applications.Innovative Provision are frequently increasing in fields of textile as if now taken the bushes of Calotropis Gigantea are converted into a fibre form and applied in various industrial applications, then it was developed to a wearable fabric.

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4. Finding solace in the Divine in the tumultuous times of Pandemic through the poem Dover Beach by Matthew Arnold

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Abstract:

In this paper I will be discussing about the difficult time faced by the world in the times of pandemic which still persists. These tumultuous times had made us more aware of the basic necessities required by an individual to live a contented life. The love of our closed ones, our filial relationships, the love, their support is the only thing we need during the time when whole world seems crumbling. I will be examining these bare minimum essentials of mankind which we generally tend to ignore and take for granted in our good time. These times made us realise what is actually important to live and what it is to be a human. I will try to bring out these nuances through the poem "Dover Beach" by Matthew Arnold, in order to understand on how do we need to admire nature and how nature can become vengeful when time comes. Humanity needs a reflection on its deeds and we as humans need to reflect and introspect by ourselves with the divine touch of spirituality in order to transform this Earth into a better world.

Keywords: *Nature, Spirituality, Humanity, Pandemic, Solace, Introspect.*

Matthew Arnold, son of Thomas Arnold, the famous headmaster of Rugby, and later entered Balliol College, Oxford in 1841. Among his Oxford friends was Arthur Henry Clough who inspired Thyrsis. He distinguished himself at Oxford and after taking hid degree he went back to Rugby to teach. He resigned in 1847 to become a private secretary to Lord Lansdowne, then President of the council, and was appointed by him to an

Inspectorship of the Schools which he retained for 35 years. In 1851, he married Francis Lucy Wightman, daughter of a judge of the Queen's Bench. He also held the chair of poetry at Oxford from 1857 to 1867, and made lecturing tours in America in 1883 and 1886.

In 1849, he published a thin volume *The Strayed Reveller, and Other Poems by A,* which was followed in 1852 by *Empedocles on Etna and Other Poems by A.* in 1853, he dropped anonymity and, under the title of *Poems by Matthew Arnold,* republished the contents of these two volumes omitting *Empedocles* and including *Sohrab and Rustum, The Church of Brou, Requiescat,* and *The Scholar Gipsy.* The other major poetry volumes were poems by Matthew Arnold, Second series (1885), *Merope (1858)* and *New Poems,* including *Bacchanalia or The New Age, Dover Beach, Thyrsis (1866).* For the last twenty years of his life he wrote little verse except of *Westminster Abbey (1882).*

Matthew Arnold was classicist by sympathy and training. He admired and was greatly influenced by the ancient Greek writers. In his essay *The Study of Poetry,* he says:

"Everything depends on the reality of a poet's classic character… if he is a real classic, if his work belongs to the class of the very best (for this is the true and right meaning of the word classic, classical), then the great thing for us is to feel and enjoy his work as deeply as we can…"

Later on he says that the touchstone for detecting high poetic quality is to compare poems with 'lines and expressions of the great masters' and discuss Homer, Dante, and Aristotle. On the other hand he was a poet of transition and much disturbed by the social, intellectual and religious currents of his age. Much of what has been called his 'personal' poetry is melancholy with a feeling of conflict. He was also much influenced by Wordsworth and Goethe. He is less popular than Tennyson and Browning and his reputation rests more on his critical works than on his poetry. When a person goes through his poetry, he realises that the fine layers of his verses are very much embedded in spirituality. One feels content and a distinct kind of solace after reading his verses.

Dover Beach is considered to be one of Arnold's best lyrics. The poem was probably written in June 1851, occasioned by

a brief Honeymoon trip across the Channel. Standing near the beach at Dover and looking across the channel towards France, the poet reflects on one of the crucial problems which was central to his age- the loss of faith in divinely created and purposeful' life. He finds the 'Sea of Faith' retreating. To him the world is dark plain- a battlefield 'where ignorant armies clash by night'. Matthew Arnold describes love as an anchorage in such a chaotic and turbulent world. It is only through love that one can beat the impersonal forces which have thrown our world into strife and turmoil. This poem provides its readers the perfect blend of spirituality and faith amid chaos.

The poem opens where the poet is standing very close to the beach, watching the gleaming light on the French coast and listening to the roar of the waves below. The initial lines record a series of particular items suggestive of the serenity and stability which Arnold desires for himself in a world characterised by the loss of religious faith. It does the job of providing solace amid tumultuous life. The poet wants to feel calm and be at peace where the religion has lost faith and humans have lost humanity, if we compare this instance to the contemporary times amid pandemic. Among the high tides of the sea there is still calmness beneath which the poet as well as all humanity strives for. The noise and movement of the sea are rendered with wonderful richness and fullness in these lines. The focus shifts from the 'calm' sea, 'fair' moon and tranquil bay to the grating roar and then subsides to a tremulous cadence suggestive of sadness. The world is full of chaos and the poet looks for its solution. The sea has different dimensions to it, at times it is at peace but sometimes its waves come roaring towards the poet. The roaring waves signify the sadness of the tumultuous times where the poet sits at his window and hopes of the arrival of the sweet peaceful night air.

Later the poet talks about ancient writers like Sophocles, who also talked about the same human misery in their literary prospects. They smelled the chaos much before, they always knew and understood the fragility of the human mind, its limitations on its emotional front and its thought process in entirety. The Greek tragedian Sophocles (496-406 BC), in his plays like *Trachiniae* and *Antigone*, the writer compares the sufferings of the human calamities to a rough sea full of wild waves, constantly destructing

human endeavours. Together with Sophocles the poet also talks about Egaean, a part of the Mediterranean between Greece and Turkey. Through this reference to Sophocles, Arnold adds a touch of timelessness to the sadness affecting human life and relates the present to the past. The sounds of human misery which the post now hears were also heard by Sophocles centuries ago. Humans used to meddle with the same emotional and intellectual exertions earlier as well and the situation is worsening day by day. The poet tries to convey that the situation has remained the same yet people ignored until and unless it led to their own destruction. People don't realise the harm that they are doing to mother Earth until and unless it affects them personally. The present Coronavirus pandemic is an example of such harm, the nature has got bottled up completely now giving us back as consequences. The continuous global warming and climate change are the upcoming hazards which could affect the entire humanity in the most drastic way possible. We need to look after our own deeds and hence strive for a better future for our upcoming generations by altering our ways appropriately.

Later in the poem, the poet uses the metaphor of sea as the 'sea of faith'. Through this metaphor the poet reflects the situation in the past and attempts to contrast it with the situation in present times. He says that the 'sea of faith' was once full, and it made life worth living but it is not so now. The simile of 'girdle' points to the role of faith in ancient times in mitigating the tremors of human misery and suffering. The 'sea of faith' that was once full is now 'withdrawing' and 'retreating', leaving the edges 'drear' and shingles 'naked'. Words like 'drear' and 'naked' suggest the hopeless situation of the poet's world. The poet also appeals to his companions and readers, since the loss of religious faith that has made this universe intolerable for a decent life, one must seek in human love those values which are undiscoverable elsewhere. This image becomes his most memorable poetic comment on the modern world. Nothing that he says of this 'strange disease of modern and highly materialistically driven life' in *The Scholar Gypsy* approaches it in urgency and power.

The poet compares the old happy times to the present tumultuous times, he says that the sea which was once full symbolic of happiness and aspirations has now turned melancholic.

Earlier it used to giggle with hopes has now folded back its bright girdles layer by layer. But the faith in the humanity in the world still persists in the heart of the poet. The sea has lost that aura which fills a melancholic heart with the courage to dream, to smile, to adore the beauty in front of innocent eyes. Whereas the sea itself has silenced down with its retreating waves, it no more sounds melodious to the poet. The waves of the sea have silenced down, and gives the foresight of some ill- omens. The winds of the night move across the vast edges of the beach as well as the time, it appears to move across the world, the entire humanity in order to provide the much needed peace. It still appears to caresses the sufferings of the world with faith.

Later in the last stanza of the poem, the poet tries to provide the humanity with certain affirmations. He tries to bring out certain realities of life and what as a community of mankind we are supposed to do in order to live a better life. He starts by saying that lets be true to ourselves as well as to the whole mankind. One should rise above from his own selfish vested interests and work towards the welfare of the world and the entire humanity. The world is full of possibilities and is actually a beautiful place to live if we are responsible towards our duties as humans. It is in our hands whether to make the world or mar it. It is full of dreams where all aspirations can be fulfilled. We need to stop and give ourselves some time reflect on our lives and introspect where we actually went wrong. The world and this beautiful nature has a lot to provide to humanity, it's always different and new signifying all shades of human endeavours. The poet again retorts by saying that if we turn irresponsible and get driven by our vested interests, if we go and defying and ignoring the existence of that divine omniscient power, we would have to suffer. There would not be joy, love or light anymore. There would only be uncertainty gripping entire humanity in its folds. The entire humanity would be utterly perplexed with chaos and confusion regarding one's own existence. We would not be left with any shoulder to lie upon in pain, no hand to hold in solitude. We would be left like the lost trembling souls in darkness spreading its arms throughout, there will be no source of light.

We need to believe in that supreme power that exists above us which commands everything that happens. We need to stop

considering ourselves as all powerful beings. There will always be things which we cannot and would never be able to control. We need to believe in humanity, the need of love, the power of togetherness in our filial relationships and our own selves. One should never be lost in pride, he/she should be aware that there will always be consequences of any kind of injustice done to humanity. One should not be so materialistically engrossed in worldly affairs that love and peace starts becoming a long lost dream. We should associate to the glory of an ultimate supreme power and reflect ourselves in that light of wisdom. As Buddha said, don't look for refuge outside, look for light within and illuminate your soul with power of wisdom. The worldly materialistic affairs provide us with momentary solace but when one begins to recognise wisdom in nature then that peace and solace becomes permanent. According to me this poem by Matthew Arnold provides the perfect medium to share this deep philosophical thought with perplexed humanity in contemporary times.

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5. Impact of Manganese Mining on Human Health with Special Reference to Heavy Metals

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Abstract:

One of the impacts of mining, which has to be given thrust, is the emission of "HEAVY METALS". The global significance and human health impact of heavy metals pollution have become major issues of public concern in the last few decades. At higher concentrations trace metals become toxic. The toxicity exerted by heavy metals is due to the inherent inability of the biological systems to render them innocuous. The bioavailability of metals depends on their solubility in water, size of particulate, sedimentation rates in air and finally retention and absorption by the skin, the gastro-intestinal track and the lungs. It is very necessary to assess the amount of toxic and heavy metals present in the environmental samples exposed to the mines and to motivate towards the solution of environmental degradation with reference to Mines. This task may include. a) Selection of site and collection of environmental samples of the ore, overburden, water samples, human blood and urine samples around the mining area. b) Preparation of environmental samples for carrying out determination of trace metals. c) Determination of concentration of trace metals eg.copper, lead, zinc, Nickel, cobalt, cadmium and manganese in environmental samples collected from exposed area of mines by Atomic Absorption Spectrophotometry and comparison of these values with the literature values.

Introduction: Mining is one of the most ancient industries known to man. It is practically as old as human civilization. Mining is a hazardous occupation has been realized since early days. It is because of these reasons that originally people employed in mining work consisted of slaves, convicts and condemned

criminals whose lives were not considered to be of any value. With the passage of time and gradual realisations of the vital role of minerals in economy of the nation, the social attitude towards this profession has changed and now this is as respectable an occupation as any other. However, even with all the modern technical developments and their applications mining work is still hazardous and needs constant vigil to keep the work environment safe and healthy. Inspite of all these precautions occasional mine hazards are not uncommon. There is also large number of occupational diseases due to exposure to hazardous mining environment.

India is richly endowed with a plethora of minerals consisting of fuel minerals, metallic minerals as well as non-metallic minerals. Our country has unique blend of big and small, manual and mechanised, open cast and underground mines. There are over 4180 working mines (excluding oil and gas, atomic energy minerals and some minor minerals) involving an aggregates area of 7854 sq. km. Baring base metal mines which are large and appreciably mechanised, mining industries in India in characterized by large number of small mines scattered geographically in remote areas.

India is the world's fifth largest producer of Manganese ore. Over 78% of total reserves are in Maharashtra and Madhya Pradesh. The production of manganese ore has never ones receded, on the contrary it has always maintained a rising trend .The reasons for this rising trend in production can be attributed to expansion of some mines, better ore faces, increasing demands of ore in domestic as well as international market, increase in labour employment, and use of sophisticated machinery.

One of the impacts of mining, which has to be given thrust is the emission of "HEAVY METALS". The global significance and human health impact of heavy metals pollution have become major issues of public concern in the last few decades. Almost 96% of the total mass of any organism in made up of Oxygen, Phosphorus, Sulphur , Potassium Sodium, Chlorine and Magnesium make up about 3.6% and the remaining 0.4% is contributed by the so-called "HEAVY METALS" or those elements with a density above 4 g/cm3.

These metals remain in traces in the human body and hence sometimes they are referred to as "Trace Metals". At higher concentrations trace metals become toxic. The toxicity exerted by heavy metals is due to the inherent inability of the biological systems to render them innocuous. The bioavailability of metals depends on their solubility in water, size of particulate, sedimentation rates in air and finally retention and absorption by the skin, the gastro-intestinal track and the lungs.

Impact of Mining on the Environment: Exploitation of minerals resources and their diffusion into environment are tantamount to human interference with the natural biogeochemical cycles of metals. The chemical pollution that we are facing today in the inevitable consequence of such interference. Intensive mining operations and processing of minerals to meet the ever increasing needs of our industrial society have generated problems related to environmental pollution in specific locations all over the world. The effect of mining and ore preparation critically found to affect Air pollution, Water pollution, Land degradation, Noise pollution, Loss of Vegetation and several Socio economic changes in nearby society.

Aims and Objectives: Since mining activities give rise to a lot of elemental pollutants, it is necessary to estimate the accumulation of toxic trace elements in biotic environment and human bodies around the mining area. This was done by analyzing the actual ore of Manganese, overburden, different water samples of the area and human blood and urine samples. The objective should be to assess the amount of toxic and heavy metals present in the environmental samples exposed to the mines and to motivate towards the solution of environmental degradation with reference to mining sites in the India. These studies must includes at least the followings:

a) Selection of site and collection of environmental samples of the ore, overburden, water samples, human blood and urine samples around the mining area.

b) Preparation of environmental samples for carrying out determination of trace metals.

c) Determination of concentration of trace metals eg.Copper, Lead, Zinc, Nickel, Cobalt,

Cadmium and Manganese in environmental samples collected from exposed area of mines by Atomic Absorption Spectrophotometry and comparison of these values with the literature values.

Health Impacts or Occupational Diseases Associated with Manganese Mining: Occupational diseases attack without a visual happening and even without the understanding of the viction. Invariably the condition of these victims is passed off as an old age diseases. The industry does not want to recognise it and the mining engineer thinks it best as a doctors problems. Different Mining industries have different problems, depending upon the mineral mined, geological formation, technique employed and living environment. Underground mining poses more serious conditions of work than open cast mines. Another important factor that contributes to the creation of hazard is the degree of mechanization applied in mining.

Occupational diseases have no cure, they can only be prevented. This can be done only by continuous, careful and detailed study of the environment and the people who work in such environment.

Occupational health hazards may be classified in general under three heads.

1] Physical:

a) Disease due to high temperature, high altitudes.

b) Noise and vibrations

c) Defective illuminations

2] Biological:

It includes Ankylestemiasis, wells diseases, Anthrax, Brucellosis,Tuberculosis and skin diseases including skin cancer.

3] Chemical:

a)Diseases due to poisonous gases and vapours

b)Diseases due to dust.

Different sources of diseases in a mining environment are Heat, Noise, Vibrations ,Noxious gases and dust.

Metallic pollution of the environment from anthropogenic sources like mining constitutes a major health hazard of this century. This has led to global concern over long term, as well as immediately imperceptible effects of heavy metals. Intoxication by metals depends on the nutritional status of the organism, many metals are

absorbed faster and in greater amount during fasting. Obviously with prevailing conditions of malnutrition in a developing country like, India, metal pollution can pose greater risk to human health. The heavy metals associated with mining are copper, lead, zinc, nickel, cobalt cadmium, manganese, iron, chromium, arsenic etc. Although some of these heavy metals are essential for life processes, their presence above a certain level may be toxic to humans.

Materials and Methods:

a) Ore and Overburden Samples: The ore samples are to be grind in an agate morter and sieved in a 2mm sieve. Coning and quartering of the sample followed by dring at 1100C in an oven.

Take1g of sample was into 250 ml beaker and digest on hot plate for 30 min with 25ml conc. HCl and 5ml conc. HNO3. Remove the beaker from hot plate, cool, filter and wash with double distilled water with 50 ml volumetric flask and make up volume with double distilled water upto the mark. This solution should be aspirated into the Atomic Absorption Spectrophotometer for trace metal analysis.

b) Water Sample:

Concentrate the water sample to 10ml-20ml ,To this add acid mixture HNO3:H2SO4 (1 : 3) and concentrate upto 10ml.Dilute this solution to 50ml with double distilled water [Spragues and slavin, W,At. Absorption, Newlett 4, 228 (1965)]2 and analyse for trace elements by Atomic Absorption Spectrophotometer.

c) Urine Sample:

Urine sample is to be filtered through whatman filter paper No. 40. This solution then directly aspirated to Atomic Absorption Spectrophotometer for trace metal analysis.

d) Blood Sample:

Clot the Blood samples and serum from plasma is to be seperated by centrifugation in a test tube and dried at 1050C in an oven. Add 10ml of 6N HCl in a test tube, warm, cool and filter through Whatman filter paper No 40. Aspirate the solution was to Atomic Absorption Spectrophotometer for trace metal analysis.

Trace Metal Analysis of Samples by Atomic Absorption Spectrophotometry:

AAS is the most effective and sensitive technique employed in determination of metal ions at trace and ultra-trace levels in environmental samples because it is rapid, selective and so simple that generally it involves the chemical treatment only, to bring the sample in the solution form. Atomic Absorption spectrophotometry may be defined as a method for the determination of a concentration of an element in a sample by measuring the absorption of radiation in a atomic vapour produced by the sample at the wavelength which is characteristics of the element under consideration The atomic absorption for routine use as an analytical technique came only after Walsh (1955) published the basic principles and theoretical factors governing relationship between atomic absorption and atomic concentrations..

Results and Discussion: Different samples of the Manganese ore, Overburden, Effluent water, Nalla water, human blood serum and urine can be collected. These results of trace metals found in the samples should be compared with the standard values. The results so obtained must presented and discussed in different sections in the light of human health and environmental pollution.

If the heavy metal concentration in the overburden is appreciably satisfactory, then the danger of leaching of these heavy metals in a ground is very low. In such cases the possible pollution of ground water in the area covered by overburden is less. Moreover in most of the mines a massive afforestation program me is being carried out which utilizes this overburden for the successful growth of plants.

To meet the acute need of healthy plant samplings of a specific species, well planned nurseries should be develop. These nurseries may fulfil 75% need of required saplings in various mines. Actually Massive afforestation program was started since 1986 at various mines. The plantation program must be designed in such a manner that the plants grown would partly meet the future requirement of timber, fuel wood and other needs of local people thereby improving their economic condition on a long term basis.

Conclusion: India is rich in various ores especially iron, coal, manganese, mica, bauxite, limestone which are distributed throughout the country. These ores are dug out from the ground and send for further processing in recovery plants. This activity is

popularly known as Mining. Various types of environmental impacts of mining have been documented in the literature. These impacts are inevitable because mining is considered essential for the developmental activities. Another most important aspect is that many industries can be located according to environmental needs but mines and mine products dressing plants have to be located where the minerals are found. This location is mostly the mountains where rich forests and small streams may be present.

Therefore vegetation and water bodies are the first targets affected due to mining activities. However, development can not be stopped. On the contrary, it is necessary to evaluate the damage done by the activity and to formulate a management plan for the restoration of environmental quality. Manganese is chiefly found in Maharashtra and Madhya Pradesh Manganese mining is a major activity in Bhandara and Nagpur district of Maharashtra. The manganese mining area are now inhabited on a small or large scale due to increasing human activity. Manganese mines affect the various components of the environment especially population of water bodies due to pit Water and leachates from overburden. Pollution of water bodies alters its physico-chemical and biological properties and leads to public health problems.

Pollution may be of two types. In the first type, the pollutants offend sense and give indication of their presence. It therefore becomes possible to take appropriate preventive and controlling measures. The second type, the most dangerous one, is insidious and does not display the presence of pollutants.

This type of pollution does more damage than the first type. contamination of trace metals falls under this category. The toxicity of many trace metals often appears when they are present even to the extent of trace or ultratrace level and so their presence is not suspected because of low concentration. Many metals like mercury, arsenic, cadmium, lead, copper and chromium etc. have been evaluated as toxic to aquatic life.

Moreover, naturally occuring and industrially produced chemicals at trace levels including metallic compounds may constitute genetic hazards, surely a matter of increasingly alarming concern of the present day.Toxic and heavy metals may affects organisms in the environment in different ways. High concentration of toxic compounds may kill most of the organisms. A more insidious

pollutant may damage the reproductive cycle of certain organisms in same way. Another way in which the pollutant can interact with the environment is by entering the food chains. Pollutant may affect the health of human beings and animals, damage vegetation, soil and deteriorates materials, affect climate, reduce visibility and solar reaction, impair production processes, contribute to safety hazards and generally interfere with the enjoyment of life property. The toxic elements move through the environment under natural conditions by the way of 'geocycle' from which the elements become available to plants and animals. The present study was aimed to assess the amount of toxic and heavy metals which are being released into the environment because of manganese mining. For this various environmental materials like the overburden, ore, water, human blood and urine should be analysed. The classification of the health hazard must be carried out under three heads:

a)Physical which included diseases due to high temperature, high altitude, noise, vibrations and defective illumination.

b)Chemical which included diseases due to poisonous gases and vapour sand diseases due to dust.

c)Biological which included Ankylestemiasis, well's diseases, Anthrax, Brucellosis, Tuberculosis and skin diseases including skin cancer.

Secondly, We must deals with the health effects of heavy metals generated during mining activities. The health effect of heavy metals includes arsenic, cadmium, chromium, copper, iron, lead, manganese, nickel and zinc. The acute and chronic toxicity of these heavy metals must be discussed and all the heavy metals in the light of their health impacts is to be discussed individually..

It is seen that pollution is spread more or less everywhere. The only difference is the areas which are near or around the industries like mines are comparatively more polluted. Today, heavy metal pollution poses a serious problem in India and hence the necessity of protection of healthy environment for human beings has increased.

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6. Preventing Juvenile Delinquency through Sports

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Abstract:

Participation in games and sports activities is very popular among students and encouraged by all our youth. Many psychosocial health benefits in youth are attributed to sports participation, but to what extent this positive influence holds for juvenile delinquency. The initiative aims to promote sports and related activities to prevent crime and to effectively build resilience of at-risk youth. Strengthening the life skills of youth is a key objective in order to minimize risk factors and maximize protective factors related to crime, violence and drug use. By enhancing knowledge of the consequences of crime and substance abuse and developing life skills, the initiative seeks to positively influence behaviour and attitudes of at-risk youth and prevent anti-social and risky behaviour. Because delinquency is an ongoing problem in today's society, there needs to be more programs created in order to correct this issue. While there is many agencies already established that could help to prevent or correct delinquency, there can be some additions to the system.

Key Words: *Juvenile Delinquency; Sports; Crime; Behaviour; Youth*

Introduction:

There are so many problems for students in school. The problems may be related to physiological, sociological, physical and economical. But, a physical education teacher is more attached to students. Thus they play a role of counsellor to the students. They should understand their problems and give them the right path. Sometimes, it is found that there are some students which show

abnormal behaviour called Delinquency. Delinquent attitude is bad for social progress. Delinquency means offense or criminal tendency. Some criminal tendencies are like: stitching the pen, stealing pen or pencil etc, sometimes abnormality in their behaviour is shown by doing this type of criminal.

Physical education teachers should stop this delinquency. Because all the time punishment is not effective, we should go the route of the problem, and then eradication is possible. This is a social problem.

If more delinquent people are there, then more hindrance will be in society. For example, life is where there is water. Similar way, society is formed where there is peace. Juvenile Delinquency is a very serious problem for society.

Meaning of Juvenile Delinquency:

i) Crime by child (innocent): Example, drinking and smoking habits, quarrel between teachers, parents, steeping the signal (antisocial crime)

ii) Antisocial behaviour of child

iii) Offence by minor, breaking some laws like social, family, economic

iv) Unable to adjust in the social circumstances.

v) Violation of Law

Age Criteria: Age limit is not fixed; it differs from country to country.

thus, it is said that:

Age changes as society changes,

Age changes as country changes,

Age changes as constitution changes.

In general a child between 7 to 16 years of age falls in this delinquency. Because in this age group the child is innocent, not understandable.

Behavioural Criteria:

It also depends upon social values, rules, and regulation. For example, In India students didn't smoke cigarette infront of teacher, it is against the rule, whereas in America it is permitted. Similarly, ball dance is not permitted in India. Nowadays social values have changed, like the handling of mobile phones.

Characteristics of Juvenile Delinquent Child:

i) They are athletic built people i.e., their activity is so fast and swift in pick pocketing also.
ii) They are extroverted in nature, it means their impression is so good and they have great control of themselves and their behaviour.
iii) They are courageous means after a strict punishment they become as they were earlier. They don't have any fear of doing any activity.
iv) Similarly, they are arrogant and not interested in following rules and regulations. Their activities are as follows: Pick pocketing, drinking, drug, smoking, lifting, habits, and deliberate law breaking.

Causes of Juvenile Delinquency:

Causes are so many; no single cause is responsible for their act.

1. **Heredity:** By birth no one is a thief, we learn or sometimes we find hereditary defects. Thus, it is not an accepted cause, but rarely defect in heredity may lead to delinquent attitude. For example, if chromosomes are XX and XY then the child will be normal. But if chromosomes are X and XYY then the child will be abnormal.
2. **Physical Cause:**
   i) Postural defects: There are some postural defects like the child is very fat and his classmate always teases him due to which he acquires a delinquent attitude. It is due to psychological defects.
   ii) Physical defect: Some people used children for their personal use by doing some physical defect to the child by making them blind and training them for anti social behaviour.
3. **Physiological Cause:**
   i) Hormonal imbalance: Internal body chemistry behaviour is changed in maturity like irritation and anger are symptoms in this age of puberty. Only a coach can understand these factors. If there is a newly married girl she shows some symptoms like doing no work, always alone, these are nothing but hormonal imbalance of body chemistry change.

ii) Powerful Sex Desire: It is a natural phenomena, it should not be advance to their behaviuour. Thus a Physical education teacher guides in that situation and he should have the potentiality to handle that situation.

4. **Poverty:** This is the first reason for Juvenile Delinquency. In slum areas poverty seems most. In the past Bihar was the most crime city in which more crime took place.
5. **Home or Family Cause:**

   As it is said that:
   Home is built by heart but,
   House is built by bricks,
   Thus, we want a happy home to survive.

   i) Broken Home: Sometimes it is seen that in some homes there is no communication between father and mother then chances are more for Juvenile Delinquency.

   ii) Step motherly treatment: In some cases it is seen that boys are treated good as compared to girls. Girls are treated differently. Thus attitude is most important.

   iii) Too much discipline: In China, more discipline is there. For students a special room is constructed in which toys with pictures of teachers are drawn into it. Thus, they show their anger by kicking or hitting them. This process is good but too much discipline is bad for a child.

   iv) No discipline: It is the duty of parents to check their child's room daily and also check their instrument. No discipline is also bad.

   v) Favouritism: Comparison between two children is favouritism, but it should affect the psychology of students. Thus no favouritism is most important.
6. **Psychological Reason:**

   i) Low Intelligence

   ii) Suppress desires: When a child fails every time then he acquires cheating skill.

   iii) Mental disease

   iv) Frustration

   v) Emotional Imbalance
7. **Social Cause:**

   India is rich in social traditions, atmosphere, values, customs, culture they are nothing but social cause.

i) Crime Dominated Area: There are some areas in the city which are crime dominated. For example, slum areas have more crime.

ii) Companion: Our opinion about friends is that they should be good. Sociology always said that crime never be alone. They are always in pairs without the help of others. No one is ready to do crime and it is also difficult. Thus, with the help of companion crime always takes place.

iii) Absence of recreation: Recreation is a very important factor. Recreation always gives us energy. For example, Japan is a workaholic country. But to break this monotony they give holidays. Recreation means something different than routine.

iv)Cheap Recreation (Defective): from pictures, cinemas we learn bad things sometimes. They all are defective recreation. "Late night movies" were only for adults, but it was seen that small children will go to see those movies. That's why they are banning these types of movies. But sometimes, they give us educational tools, but how to use them is most important.

8. Educational Reasons:

i) It is seen that upto class tenth all subjects are compulsory other examples are like environmental science which is now compulsory for second year students but it is seen that no classes are there and all students get passes with good marks. They get no knowledge but secure good marks thus objective curriculum is bad.

ii) Examination system: Today's examination system is not effective and good. All students get passed upto ninth. This process is not good for students. From this they can't put much more time into exams.

iii) Teacher students have less relationships: In the past we learned 'Guru' or 'Acharya' are the words which were the most important in one's life. They are considered as 'God' for one's life. But today the situation has been changed to lecturers, teachers, and professors were not considered as teachers. Now the relationship between students and teachers has totally vanished.

iv) Lack of co-curricular activity: In this area students can show their talent apart from studying activity. In the past it was seen that Prime Ministers or leaders were elected from Student leadership but nowadays all election of students has totally vanished in colleges. That's why the intramural, co-curricular activity are totally vanished. Today colleges are nothing but the entrance of registration of admission and university are only selling the degrees.

v) Improper Teaching Method: Method is like a weapon. If we select a good method of teaching them, good teaching is possible. If we teach in an examination oriented method then students get satisfied. Improper teaching methods are not beneficial for students.

Prevention Approach:

It is seen that Principal and Physical Education teachers are most important in any school. They both have lots of burden in them. Their values are totally different from others.

1. Juvenile delinquency is a very serious problem for society. It's like cancer to society. If the germs are activated then it should be harmful. Juvenile delinquency is like this. If we don't stop this, it will definitely be harmful to us or it will lead to social disaster. For example, if somewhere there should be fire in the jungle and if we can't control or stop it, it leads to burn all over like this Juvenile delinquency is.
2. Total eradication is not possible our approach should be preventive. In ancient time there we 'Ram Rajya' in which everything is safe. But today the situation has been changed, thus philosophy said that if a gentle man is inactive then the thief can do anything. If they are not socially involved. Thus, as a physical education teacher we have to do something for the eradication of Juvenile Delinquency. But total eradication is not possible.
3. Sympathy, guidance counselling, supervision and treatment are important approaches. Sympathetic

attitude is most important. This psycho-physical treatment should be given. For guidance, inter-relationship is most important one should open his heart in front of you. For counselling every child is considered as a special one only the thing is that we should understand it. Thus, guidance is a diagnosis but counselling is the treatment. Supervision should also be there, thus we have to know what the situation is. Treatment is the best medicine, the treatment in the form of psycho-therapist or punishment.

4. Educate the child regarding evils thoughts. It is the duty of a physical education teacher to educate the children regarding the effects of drug, smoking. Passive smoking extreme and extreme smoking streme are bad. Wine, stealing habits are very bad for our life and health.
5. Parents, teachers, relatives, neighbours, friends, everyone's role is important. In this teachers and parents role is more vital. For example in Puri there is one festival in which the Chariot of 'Jagannath' is carried over the city. But it is not possible to carry the chariot by only a single person, lots of people are needed to carry likewise collective efforts are needed to stop Juvenile Delinquency. Today's neighbour role is totally finished. In the Bangalore government of India a big Rehabilitation centre is there which is free of cost. This centre is for drug addicts. The work of this centre is to eradicate the drug addict person totally. These types of efforts are needed for the eradication of Juvenile Delinquency.
6. Most important is to provide 'Substitute arrangement' which means diverting mind in other activities. For example, in a stadium if all arrangements like seating, food and other facilities are good then no disturbances are possible. In the similar way in school of sports activities l, classes, canteen arrangements l are good then good

atmosphere is created. Juvenile delinquency should be eradicated if substitute arrangements are there.

7. Psychoanalysis, psycho drama, play therapy are important.

How sports can Prevent?

Role of sports is most vital because it is a natural tendency, activity, interest, easy, recreational values also.

1. Sports are a very good pastime: It is true that sports are a very good passtime not passing the time. If we are in the field then we do something or play. Our mind as well as body are always busy playing. Thus no negative thoughts come into mind.
2. Creative Recreation: It is the best method for recreation. Children remain busy in recreation activities. Thus, sports play an important role.
3. Promotion of total Health: Health is a real wealth. The children who are unhealthy are delinquent. Physical, social, mental, emotional, holistic health are good. They all are developed through sports.
4. Emotional Security and control: If we participate in sports, emotional Security or feeling are aroused. The feeling of "Mine" is developed through sports i.e., my ground, my field, my home can be developed which is most important.
5. Desires are satisfied: No excess emotionality is developed, our desires are also satisfied.
6. Satisfaction of needs: Some people are greedy and they can't satisfy all time. But sports is the activity which satisfies the needs or basic needs of a child.
7. Sublimation of instincts(Catharsis approach): Sports purify emotions, our desires are a lot but sports help to maintain our Instincts.
8. Good social atmosphere provided: The best example is the world cup in which India-Pakistan match took place where war should be only finished due to sports. Thus, the social atmosphere is good or created due to sports only.

9. Ethical values promoted: Unethical behaviour can't be sportsman. A player, if he/she is out he himself goes out of the field. This shows their ethical behaviour. Thus, through sports all positive and good attitudes are developed.

Conclusion:

Despite the large role of sports in the development of adolescence, little is known about the relationship between sports participation and juvenile delinquency. This study aimed to provide more insight in the association between sports participation and juvenile delinquency. Improving the pedagogical quality of the sports environment and including those measures in research on sports participation and psychosocial development may provide important knowledge to realize the potential positive influence of sports activities on juvenile delinquency. Sport practices based on the premise of crime prevention or societal benefits need to be addressed. problems are critically observe the underlying assumptions, distinctions, ideologies and research positions that constitute the conceptions and knowledge surrounding sport as a means of crime prevention.

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7. How Covid-19 has Altered the Tourism & Hospitality Industry in India? The Way Forward For A Better Tomorrow

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Abstract-

The Indian tourism and hospitality industry have occurred as one of the crucial drivers of development among the services sector in India. Tourism in India has noteworthy potential seeing the rich cultural and historical heritage, variety in ecology, terrains and places of natural beauty spread crossways the country. Tourism is also a potentially great employment generator besides being a significant source of foreign exchange for the country. In 2019, FEEs were US$ 29.96 billion registering a growth of 4.8 % year-on-year and reached US$ 5.40 billion during January-February 2020. The pandemic & the series of lockdowns have a huge impact on tourism and hospitality sector. Each and every state has been affected due to this Covid-19. The hospitality sector has also been affected hugely due to this pandemic. To assess the overall impact of Covid-19 the authors have taken the help from the secondary sources. Based on different studies which have been done in the tourism and hospitality environment, this manuscript has been designed. It will also provide an overall idea regarding the aftermath of Covid. The tourism industry, hospitality industry & tourism education sector have taken into consideration to find out the impact of Covid-19.

Keywords- Indian tourism sector, Covid-19, lockdown, tourism and hospitality industry.

Introduction-

COVID-19 is a disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for the virus, and 'D' for disease. Formerly,

this disease was referred to as '2019 novel coronavirus' or '2019-nCoV'. Initially, Covid-19 emerged in Wuhan, China in September and later it spread around the world. The intermediate source of origin and transfer to humans is not known, however, the rapid human-to-human transfer has been confirmed widely. India reported its 1st case on 30th January 2020 at Thrissur, Kerala (Andrews et.al. 2020). Covid-19 is the biggest pandemic of the century which created challenges and opportunities for each & every person starting from bankers, farmers & migrants. The Covid-19 gradually spread across India. On March 24, the central government enforced a country-wide lockdown. Before enforcing it, the central government took several measures for preventing the spread of COVID-19 (Debraj Ray & S. Subramanian, 2020).

Tourism has been considered as a source for social interaction and cultural transformations and economic growth. Interaction between guest and host is inevitable during travel where tourists generally assume a positive interaction with the local community (Armenski et al., 2011) resulting in positive experience and vice versa that ultimately affects the destination (Skipper, 2009). This industry has been one of the oldest industries giving employment to millions all over the world bringing much required foreign exchange and growth to the nations with some nations building their whole strategy on tourism. When COVID-19's impact expands around the world, the main concern for policymakers and corporations are their people's health. Although this emphasis should continue, the consequences for economic development and corporate earnings will contribute to rapid sell-off around the globe in financial markets. It is really shocking, that our tourism, hospitality sector and leisure tourist are the one to face severe repercussions of global crisis created due to worldwide spread of virus known as COVID-19 and effecting business and creating a situation of economic crisis for the whole world. It is hindering production and in this way directly affecting the supply and demand chain and is having negative impact of business, industries, organization etc. Yet unpredictable which results are in to take decisions to close hotels, restaurants, and other tourist destinations. A government study has confirmed that the tourism industry faced a devastating impact due to the coronavirus pandemic and the subsequent lockdowns, with the Union

government informing the Rajya Sabha on Tuesday that an estimated 21.5 million people working in the sector lost their jobs between April 2020-December 2020. According to Union Culture Minister significant numbers of jobs were lost in the tourism sector once the lockdown was implemented. 14.5 million jobs during Q1 [April-June 2020], 5.2 million during Q2 [July-September 2020] and 1.8 million jobs during Q3 [October-December 2020] are expected to have [been] lost as compared to estimated 34.8 million jobs in the pre-pandemic period of 2019-20 (Direct jobs).

Objective-

The intention of this manuscript is to recognize the prevailing research works on the impact of COVID-19 on tourism and hospitality industry in India. The study also focuses on finding out the different dimensions & challenges that have been used in different papers by the respective authors. The author has also gone through the publications in different journals so as to recognize the prospective progress of this area. I have enlisted some objectives:

- ❖ To categorize the literature on impact/effect of COVID-19 on tourism & hospitality industry to year, journals, citation etc.
- ❖ To describe and summarize how badly COVID-19 has impacted the tourism & hospitality industry in the country.
- ❖ To categorize key gaps in the existing research and present the limitations as the prospective research agenda.

Methodology-

Our paper will present an orderly assessment of available literature, on the impact COVID-19 on tourism and hospitality Industry. The benchmarks, we have followed to categorise the existing studies for review process are:-

The paper should be published during the period of COVID-19 (2020-2021) in an ABDC or SCOPUS indexed journal. We have not considered the data from textbooks, websites, detailed reports and various publications from diverse organisations/government, dissertation reports of different degree students, papers which are under process and publications in national/international conferences.

The papers which we have taken into consideration are from India only (majority of the authors are also Indian) and those articles have already been published in well recognised journals i.e. Journal of Tourism Futures, Worldwide Hospitality and Tourism Themes, Journal of Teaching in Travel & Tourism and many others.

The author has taken into consideration a count of 18 papers which has been published in last two years.

We have tried our best to extract the findings from each and every paper and lay down the foundation of future research agendas.

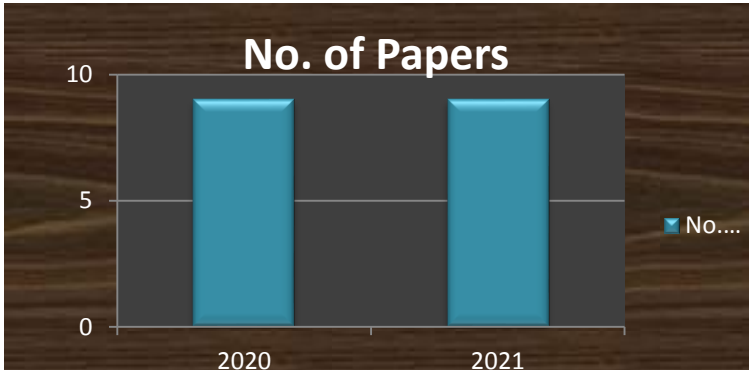

Fig 1- The above figure represents total number of papers taken from the last two years.

Paper No.	Journal Quality	Paper No.	Journal Quality
Paper 1	A	Paper 10	A
Paper 2	SCOPUS	Paper 11	A*
Paper 3	C	Paper 12	A
Paper 4	C	Paper 13	C
Paper 5	SCOPUS	Paper 14	others
Paper 6	C	Paper 15	A
Paper 7	C	Paper 16	C
Paper 8	B	Paper 17	SCOPUS
Paper 9	SCOPUS	Paper 18	SCOPUS

Table No 1- The above table gives us the idea about the number of papers we have taken from each data bases.

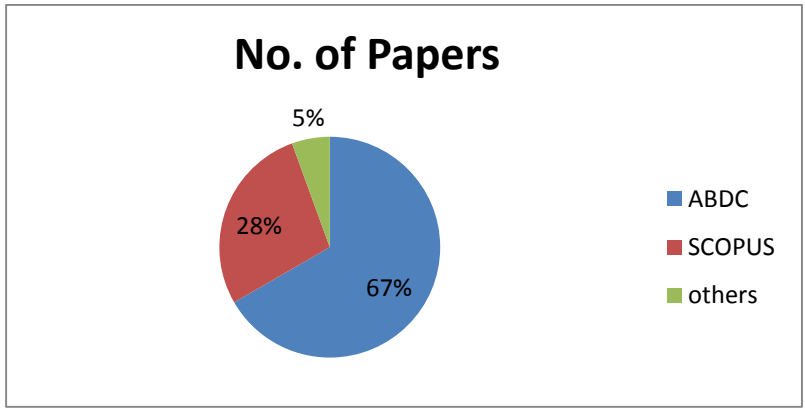

Figure 2- The above figure gives us an idea about the number of papers which have been taken from each databases

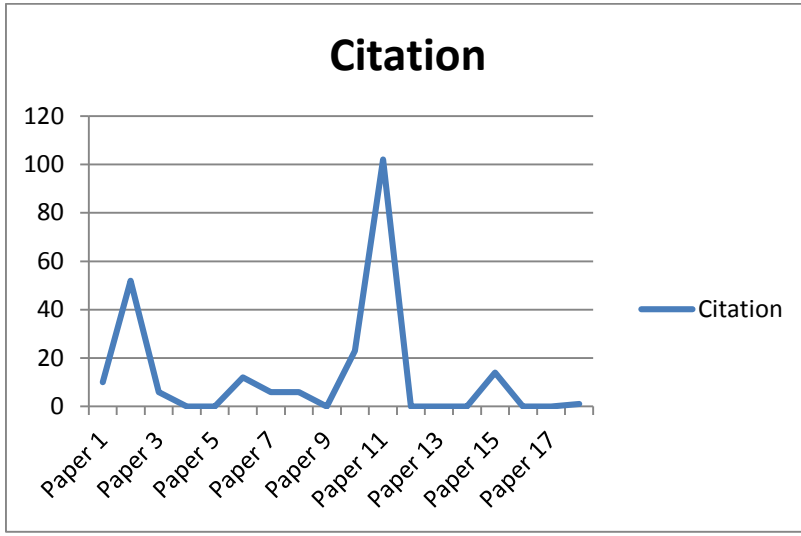

Figure 3- It gives us the idea about the citation of taken papers.

Journal Name	No. of Papers
Current Issues In Tourism	1
International Hospitality Review	1
International Journal Of Contemporary Hospitality Management	1

International Journal Of Environmental Research And Public Health	1
International Journal Of Hospitality Management	1
International Journal Of Religious Tourism And Pilgrimage	1
International Journal Of Tourism Cities	1
Journal Of Destination Marketing & Management	1
Journal Of Hospitality And Tourism Management	1
Journal Of Statistics And Management Systems	1
Journal Of Teaching In Travel & Tourism	1
Journal Of Tourism Futures	2
Palarchs Journal Of Archaeology Of Egypt/Egyptology	1
Research In Globalization	1
Strategic Change	1
Tourism Recreation Research	1
Worldwide Hospitality And Tourism Themes	1

Table No 2- No of Papers from each journal

Litetrature Review-

The contemporary study done by Pathak and Joshi (2020) examines the effect of the psychological capital of proprietors and the managers of finances resort at the organizational resilience throughout COVID-19. Their results display that the owners/managers of small inns can fill desires and optimisms in the personnel too and may assist them to simply accept the truth and put it together for destiny contingencies. From a realistic angle in the present state of affairs where the tourism zone is suffering for survival, the findings of this study have assisted the owners and managers of budget hotels to navigate through the degrees of COVID-19 pandemic for quick restoration. The study of Davahli et. al. (2020) reviews on a scientific assessment of the posted literature used to

expose the current studies investigating the hospitality industry in the face of the COVID-19 pandemic. The reviewed articles centred on distinct elements of the hospitality industry, which includes hospitality workers' issues, lack of jobs, sales effect, the COVID-19 spreading styles in the enterprise, marketplace demand, potentialities for restoration of the hospitality industry, safety and health, tour behaviour, and choice of customers. As a result, it was found out that several theoretical strategies were being used to analyse the hospitality industry at the time of the pandemic. This observation by Gupta et. al. (2020) targets to examine the elements that prompted Indian travellers to keep away from touring abroad due to the latest outbreak of COVID-19 in 2020. They discovered the connection between the perceived threat of touring and the possibility of travel evading in India attributable to COVID-19. The outcomes found out an advantageous correlation among the perceived hazard related to COVID-19 and travel avoidance. Familiarity with COVID-19 has correlated with travel evading behaviours. Sushil Kumar (2020), in his paper mentioned about the effect of COVID-19 in the hospitality sector has emphasized the present-day situation for the hospitality region & tourism sector. The results suggest that the Hospitality region needs to plan for the approaching period and shape an action plan for today and tomorrow to deal with all situations. This study by Manhas and Nair (2020) explores the position of spiritual tourism in revitalizing the Indian tourism region post-COVID-19, with a focal point on domestic tourism. This study also identified the foremost realistic impediments the sort of plan would need to overcome, consisting of bodily distancing, crowding, festivals, and formality performance. Furthermore, this study has offered realistic insights into the capability pioneering roles of India's key religious sites, to create projects to rebuild the religious tourism sector. Mohanty et. al. (2020) in their work targeted to apprehend the diverse aspects of augmented reality and discovered its possibilities for assisting the re-launch of the tourism sector post-COVID-19 per the guidelines set out by WHO and UNWTO. This work helped numerous tourism DMOs and policymakers to plan futuristic guidelines for AR-driven tourism management and development. The COVID-19 pandemic is unparalleled and in no way visible before. The observation established its novelty via

way of means of completely focusing on the components of AR that could aid the re-launch of tourism post-pandemic. Kour et. al. (2020) in their research work target to analyse the impact of the pandemic state of affairs on guest-host relationships and its future impact on travel intentions among the tourists in India. The findings showed that COVID-19 is not only inflicting a threat to tourism currently but have an extended impact on guest–host courting as bad interplay or experiences are supposed to be regularly radiated by the tourists. The paper by Tiwari et.al. (2020) pursuits to emphasize the attitude of tourism educators with appreciate to upcoming challenges the tourism discipline and methods to reinvent and reboot the tourism education in the post-COVID-19 phase. They suggest that ambidextrous management tourism education be followed in the post-COVID-19 phase. In different words, educators ought to emerge as adept at the shipping of publications in a lot of modalities that could enable them to deal with the quick and medium-time period effects of teaching in COVID-19, at the same time as providing through anticipation of destiny demands, cutting side curriculum. Anusha Pai et. al. (2020) in his paper role of management in the hospitality industry during a COVID-19 outbreak provides the particular contemporary state of affairs wherein managers are getting extra careful and the possibilities of prevailing consumer trust. The attention of consolidated tips at the strategic control of inns and a people-orientated operating method is an extra sustainable exercise. It might be a possibility for establishments to leverage generation to create differentiation.

The novel coronavirus has affected human beings and organizations worldwide, triggering an international financial crisis. In this aspect, the tourism region isn't always being left behind. **Jaipuria et. al. (2021)** study on the impact of COVID-19 on the tourism sector has helped us to understand that the pandemic has now no longer only affected the overseas exchange earnings, however additionally affected diverse nearby developments, job opportunities, thereby disrupting the neighbourhood groups as a whole. The research of **Vikrant Kaushal & Sidharth Srivastava (2021)** addresses two important concerns, first, pertains to the major challenges that hospitality and

tourism industry faces amid current conditions; and second relates to the vital learnings for the industry. The study draws on the interviews with 15 participants in senior positions in hospitality industry, and tourism and hospitality education services. The major implications of the study are in the form of determined themes adding to the evolving theory on COVID-19 pandemic and tourism & hospitality industry; and managerial recommendations to address host of issues while taking essential learnings stemming from the current circumstances. **Satya Bhusan Dash & Priyanka Sharma (2021)** found that around 79 % of people are anxious and suffer from fear and sadness, mainly due to the adverse economic impact and the risk of becoming infected. **Arshad et. al. (2021)** investigated the impact of Covid-19 on the Indian tourism industry. In their study the SARIMA model seeks to manifest the monthly arrival of foreign tourists and also elaborates on the progressing expected loss of foreign tourists arrive for the next three quarters is approximately 2 million, 2.3 million and 3.2 million, respectively. Thus, in the next three quarters, there will be an enormous downfall of foreign tourist arrivals (FTAs), and there is a need to adopt appropriate measures. The comparison demonstrates that SARIMA is a better model than H-W model. **Abha Lakshmi Singh et. al. (2021)** addresses two important concerns: first it pertains to the unprecedented sociocultural and economic impacts that Kashmir's tourism industry faces amid current conditions, and second it relates to the significant change in the tourist profession and other activities due to the COVID-19 lockdown. The findings of the study provide a rapid assessment of the reported impacts of COVID-19 on Kashmir tourism all through 2020 with a speedy decrease in tourist arrivals including documented travel restrictions. The research model of **Khanra et. al (2021)** extends the innovation resistance theory by including two behavioural measures (privacy concerns and visibility) and examining how security concerns moderate the associations between them. The crucial factors they identified were usage barrier and image barriers, privacy concerns, and visibility. Furthermore, security concerns significantly moderated the association between image barrier and Mobile payment services adoption postponement in the hospitality sector. **Rajkumari Mittal & Parul Sinha (2021)** studied the religious tourism supply chain and understand and

introduce resilience across the same to mitigate post-pandemic disruptions. The key findings of this research paper led to identifying both threats and opportunities for the religious tourism supply chain, which has been into existence and caused many disasters in the past. As pandemic Covid-19 shut the doors of these religious destinations for extended periods, it became necessary for governments, state authorities and private parties to think and devise the post unlock operating processes for this supply chain. This thinking directed the authors to create a framework for the smooth flow of people and other services across this supply chain. **Singh et. al. (2021)** examined the impact of perceived vulnerability of employees in hospitality sector related to job loss and satisfaction with life. The result shows that Perceived vulnerability of job loss negatively impacts satisfaction with life; however, this negative impact gets significantly reduced in the presence of emotional and financial well-being. **Vig & Agarwal (2021)** studied the impact of covid-19 on small restaurant entrepreneurs in the Indian context. They found that the small restaurant entrepreneurs are exploring some new opportunities amid the crisis and adopting innovative approaches, technological and digital interventions to meet the consumers' need for a contact-less dining experience.

Discussion-

The COVID-19 pandemic has impacted the tourism industry due to the resulting travel restrictions as well as slump in demand among travellers. The tourism industry has been massively affected by the spread of coronavirus, as many countries have introduced travel restrictions in an attempt to contain its spread. The United Nations World Tourism Organization estimated that global international tourist arrivals might decrease by 58% to 78% in 2020, leading to a potential loss of US$0.9–1.2 trillion in international tourism receipts. This is one of the worst crises to hit the tourism industry and it has impacted all its segments – inbound, outbound and domestic, and leisure, cruise, adventure, corporate meetings, conference, and exhibitions. In majority of tourism companies job situation is in flux, with some employees working from home – to handle cancelations, for instance, others asked to take their allotted leave, and those with no leave asked to

go on leave without pay. Tourists felt abandoned and mistreated in the wake of the pandemic and that they went through numerous problems because of the panic among the local community. This made them feel negative, about the destination or about the overall visit. This impacts the travel intentions of the tourists, meaning their willingness to travel to the destination again. This is due to the generation of negative emotions or feelings which is generated due to lack of support, misbehavior and alien like treatment by the host community. The interaction between host and guest create actual destination experience, which ultimately affects tourists' behavior, destination evaluation and their further decisions.

The effect of owner's lifestyles pleasure on organizational resilience courting mentioning that the degrees of existence the delight of owners and executives of price range hotels significantly affect the procedure of healing of the business. Sales and marketing planning should start today for upcoming business in the form of ads, mass mail, etc. Let the travellers know the regulations taken by the hotel, preventive measures for their protection and security. Hoteliers need to perform a little charity work to create a good image in front of them. Give a brief concept on cancellation policies as all customers are worried about future scenarios. It will give the travellers satisfaction. The consequences monitor that spiritual sites ought to play a massive role in reviving the Indian tourism sector by promoting staycations and micro-holidays, and by reforming existing tasks. The findings of this examination recommend that collaboration with other distinguished tourist points of interest like Yoga and Ayurveda, which have deep-seated relationships with Hinduism, can be an important tool to spark off the sector; these results are promising even at this degree of necessity for India. In future there may be a terrific call for cellular and Web-based AR to now no longer only make certain tourist protection but additionally to create unique, accessible, personalized, context-specific, deep, and memorable experiences. A strategic framework need to be prepared for the industry to cope with and preserve the guest–host relation to protect the future of tourism and preserve potential travel market reiterating the importance of tourists/guests and their perspective about the hosts, in growing and developing the tourism of a destination. The

tourism education sector will be affected because the tourism industry is being affected by this pandemic. This instability will lead to the discouragement of students from opting for tourism and cognate courses in the future.

Conclusion-

While every industry is facing uncertainty over its future course with the unabated global advance of Covid-19, fears are more visceral for the tourism industry. As those in the industry point out, information technology, banking/financial services and pharmaceuticals have no doubt felt the sting of the virus, but they are not as dependent on the physical mobility of people, and their comfort with the idea of travel, both of which have been casualties of the current crisis. Will it take nothing short of a vaccine, they wonder, for people to feel confident enough to undertake non-essential travel again. The coming days a new dawn may be witnessed in tourism and hospitality sector. It may take time but there is no doubt that Indian tourism and hospitality sector will recover soon and touch the glory.

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8. Society and Women Empowerment in India

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Abstract

The development of any society mainly depends on the advancement of the position of women in that society. But unfortunately the fact of Indian Culture is that there is continuous inequity and disregard of females which could be in terms of inadequate nutrition, lack of job opportunities, restricted access to education, no property rights, poor health and increasing child labour and so on. If we analyze their situation we can see that there condition is pitiable. This is because females are overworked, incompetent, uneducated, malnourished, powerless and in poor health. However, the issue of females strengthening has received most deliberation in the present development debate that is genuinely reflected in the contemporary development literature. Women empowerment isn't too old a phenomenon. In oriental belt of globe; it has got currency just in the ongoing past. The approach of female empowerment is expected to conquer any hindrance among men and women. In the 1980s and 1990s, researchers and experts tended to be empowered when women mobilized themselves and took initiative positions in work settings or in society. The introduction of the 73rd Amendment Act provided state funding for women's empowerment and 33% of seats (recently 50%) in panchayats and offices were allocated to women. In 1980s women empowerment has obtained a solid ground. It is generally accepted that sexual orientation will disappear if women develop their responsibilities and exercises with their male partners. The developing woman does not talk about economic and political progress in addition to domestic advancement. To look at this issue from a national perspective focuses on the position of women in Indian society.

Keyword: Community, Contemporary, Development, Empowerment, Amendment

Objectives

- To study the historical profile of Indian women
- To study the problems of women in Indian society.

Introduction

The position of women in India has been subject to several changes over the past few times. From equal position with men in ancient times through the miserable position of the medieval period, to the development of equal rights by many reformers, the historical backdrop of Indian women in India has been astounding. There is no denying the truth that women in India have gained some rights might be as a result of the social legislation, the advancement made in the fields of education, health or financial or as a result of Technological developments, or because of a procedure of development, however in small numbers, we discover engineers, journalists, pilot, teachers, administrators, judges including a women judge in the Supreme Court, State Governors, ambassadors, members of parliament and ministers. Notwithstanding these accomplishments, the reality remains that the women's condition is an unfavorable reality. In spite of the truth that concern is being communicated for her liberation in each field, financial independence is of essential consequence. Efforts are on to guarantee that she is financially not dependent on anyone. But these efforts have hardly been any help. The woman is currently troubled with two types of jobs- her work within the house and the job outside the home. She doesn't find any free time to enjoy the fruits of her financial independence. The economic independence is not the final solution. An equal importance must to be paid on the complete development of the woman the knowledge about her rights and responsibilities, the acknowledgement of her job and the work that she does at home. If necessary the social system must change so that the woman does not have to ask for concessions.

Women and Empowerment: An Indian Perspective

Since the status of women shows the character of the society and women empowerment is an important factor in determining the

status of women, it is very necessary to know about the importance of women empowerment in India.

- Positive attitude towards self and others
- Improved self-image through formal education
- Independent decision –making on economic matters
- Role in decision making on policy matters
- Power to participate in economic decisions
- Access to better health care and health facilities

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Women's empowerment is a continuous and dynamic approach that enables women to show interest in choice - to shape all economic, political and social policies among the general public and to improve their ability to change the structure and situation that hinders them. The introduction of the 73rd Amendment spoke

to an effort for the empowerment of women, which was supported by the state and 33% of seats in panchayats and offices were saved for ladies. Reservations in the panchayats were considered an important milestone at a time when women were being empowered in India. Women empowerment is very much needed to manage the economic development of the country when there are ladies in 50 per cent of the population. Former President APJ Abdul Kalam said that empowerment of women is essential to become a better country and when women are empowered, a stable society is guaranteed. The empowerment of women is very important because their considerations and their value system will lead to the development of a good family, a great society and ultimately a good nation. It has been recognized around the world that the progress of a country without women's empowerment is unthinkable. Although the preliminary plans dealt with the welfare of women, 2001 was declared the year of women's empowerment. The National Policy for Women's Empowerment was introduced in India in 2001. To make this a reality, the National Plan for Women's Empowerment was implemented in 2003-04. A coordinated approach to women's empowerment with clear goals, objectives and duration is included in the Tenth Five Year Plan (2002-07). Since the empowerment of women depends not only on economic decision makers but also on social factors, the Government of India has brought in a fourth three dimensional strategy for social empowerment, economic empowerment and gender equality. The government has undertaken a number of activities, including projects and strategies, to guarantee the success of this current system. The Protection of Women from Domestic Violence Act, 2005, the Immoral Traffic Prevention Act, the Prenatal Diagnostic Techniques Amendment Act, 2003, Sati Prevention Act, the Hindu Succession Act, National Rural Employment Guarantee Act. Different plans actualized under The Ministry of Women and Child Development like Swayamsiddha, Support for Training and Employment Program (STEP) and so on., Rashtriya Mahila Kosh (provides small scale credit), Kishori Shakti Yojana, Nutrition Program for pre-adult young ladies, are the couple of out of several means attempted by the Government to improve financial status and gender equality. Working ladies lodgings and crèches have additionally been set up to help working

ladies in increasing economic authority and further their societal position. The main objectives of the 11th Five Year Plan are to strengthen the justice system to eliminate discrimination against women and to make gender perspective a mainstay in the development process. The focus of the Twelfth Five Year Plan (2012-2017) is to ensure the improvement of the position and status of women by addressing structural and organizational boundaries and strengthening the gender mainstream.

Women Rights in India

The Guide to the Equality of Women is enshrined in the Constitution of India in its preamble, Fundamental Rights, Basic Duties and Guidelines. The Constitution provides equity for women, although it also allows the state to make provisions of positive discrimination in favor of women.

Some of the important articles are as per the following

- Article -14 - (Equality before law)
- Article -15(i) - (No Discrimination by state on grounds of race, caste, sex, religion, place of birth or any of them)
- Article 15(3) - (Special provision by state in favour of Women and Children)
- Article 16 - (Equality of opportunity in matters relating to employment)
- Article 39(d) - (Equal pay for equal work)
- Article 243(D) - (1/3 reservation for women in panchayats) and in municipalities (Article 243(T))
- Article 300(a) - (Right to Property to Women)

ϒ Abolition of Sati Act,1829
ϒ Special Marriage Act,1954
ϒ Hindu Succession Act,1956
ϒ Dowry Prohibition Act,1961
ϒ Maternity Benefits Act, 1961
ϒ Medical Termination of Pregnancy Act, 1971
ϒ Domestic Violence Act,2005
ϒ Sexual Harassment Bill, 2010(Ram, 2004)

Abolition of Sati Act,1829

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Problems of Indian Women

Dowry and Bride burning: This is another problem that is usually faced by women from lower or middle class family during or after marriage. The boys 'parents want a lot of money from the bride's family to become rich at once. If the dowry demand is not met the groom's family will burn the bride. According to the Indian National Crime Bureau, there were about 6787 dowry deaths in India in 2005.

Disparity in Education: In the modern age the level of education of women is still lower than that of men. Female illiteracy is high in rural areas. 63% or more of the women here are illiterate.

Child Marriages: it is one of the main problems for girl child parents. It is highly practiced in the rural India.

Low Status in the Family: It is harassment or violence against women.

Inadequate Nutrition: Inadequate nutrition in the childhood affects women in their later life particularly women belonging to the lower middle class and poor families.

Status of Widows: Widows are considered useless in Indian society. They behave poorly and have to wear white clothes.

Atrocities on Women

Based on the reports published in the daily newspapers in India, it is becoming clear that women are the victims of social change and economic exploitation in India. From the media news, rape is

becoming a fad in everyday events in cities, towns and rural areas. India has observed sex-based inequality since its early history. The most important attempt to update the status of women was made by various social reformers in the early 19th century, whose struggles prompted the introduction of various laws for the protection and advancement of women.

Conclusion

The country has a male dominated society and there are many problems faced by women. Strict law and order against women violence can be the first step which the state and central government should take so that the crime in the house as well as outside the home can be controlled. The second important thing is girl's education by which the females can be aware of the rights and law and order, and other kinds of support provided to them by different organizations.

Suggestions

Suggestions for Solving the Problems Faced by Women in India are as follows:

- A career and entrepreneurship development program should be implemented to enable women to become self-employed by enhancing their capacity and competencies in decision making.
- National and state level commissions for women, NGO, Task force for women and child development, DWACRA, ICDS programs should undertake awareness campaign about legal rights, women's rights, child rights as well as about AIDS, population, education, health, environmental programs with all sincerity and honesty.
- The attitude of the husband and other family members should be changed through mass media and other means.
- Women need to change their attitude towards their family members and co-workers. They must respect them, be cooperative, and cultivate great qualities such as love, affection, integrity, and trust in order to maintain a sensitive relationship with them.
- Elimination of illiteracy, poverty, dowry-ills and all for effective implementation of all women related programs and laws.

ϒ There are no dearth of policies.

ϒ More emphasis should be given on the implementation of the policies.

ϒ It is to be ensured that the system works properly.

ϒ Public awareness is to be created on the importance of women education.

ϒ More scientific studies should be encouraged for effective measure

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9. Utilization of Beneficial Soil Microorganisms in Bioremediation

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Abstract

Since more than a century, soils, waters, sediments and the subsurface are facing a massive pollution by a large series of chemicals and by chemo-physical stresses. Microorganisms are the major players in counteracting such stresses and recycling elements by mineralizing or partitioning pollutants, even in environments poor in nutrients or lacking availability of major electron donors and acceptors. Starting from the mining of raw materials to production, transportation, use by end users, disposal or accidental spills of chemicals often contaminate soil to the extent that threaten the health of human life, livestock, wildlife and indeed whole ecosystems. Traditional methods to cleanup or decontaminate the soil are expensive, labour intensive, do not always ensure that pollutants are completely removed or destroyed and often result in abrupt changes to the physical, chemical, and biological characteristics of the treated soil. Use of microorganism have shown promises in remediation of soil contaminated with heavy metals and radionuclide, organic compounds including chlorinated solvents like TCE; explosives such as TNT, RDX; petroleum hydrocarbons including PAHs; PCBs and pesticides such as atrazine and organophosphates. Aesthetically pleasing cleaning methodology, minimal disruption and preservation of top soil, usefulness in treating broad range of environmental contaminants and low cost (60–80% or even less costly than conventional methods) are the advantages associated with microorganisms mediated soil remediation technology and so it has gained increasing attention over the past 15 years. The chapter focuses on an overview of various physico-chemical methods used earlier for soil remediation purposes, what are the bioremediation

techniques used nowadays and how it works; finally future perspectives of bioremediation techniques and conclusion.

Keywords; Bioremediation, Heavy metal, Pesticides, Soil Microorganisms

1.1 Introduction

Worldwide, contamination of soil due to various anthropogenic activities is a severe problem. Intensifi cation of agriculture and expansion of industries has resulted in increased release of a wide range of xenobiotics. These contaminants render harm to humans, livestock, wildlife, crops, or native plants causing ecological problems leading to imbalance in nature. The scientists all over the world are trying to solve it through several means such as physical, chemical and thermal processes resembling excavation and transportation of contaminated soil. Unfortunately, those methods are expensive, labour intensive, do not always ensure the pollutants are completely removed or destroyed and often result in abrupt changes to the physical, chemical and biological characteristics of the treated soil. The search for alternative methods for traditional methods to clean polluted sites resulted in evolution of bioremediation techniques. Bioremediation approaches have gained considerable interest and a plenty of research have been carried out and published on the application of various microorganisms for decontamination of different type of pollutants in soil. However, still more and more research is required for complete understanding of available techniques followed by suitable modification of the same to gain maximum output from that and at the same time exploration of new possibilities from day by day experiences.

Traditional reliance on chemical analysis to understand the direction and extent of treatment in a bioremediation process has been found to be inadequate. Whereas the goal of bioremediation is toxicity reduction, few direct, reliable measures of this process are as yet available. Another area of intense discussion is the assessment of market forces contributing to the acceptability of bioremediation. Finally, another important component is a series of lectures and lively exchanges devoted to practical applications of different bioremediation technologies.

Bioremediation is a biological mechanism of recycling wastes in to another form that can used and reused by other organisms. Nowadays, the world is facing the problem of different environmental pollution. Microorganisms are essential for a key alternative solution to overcome challenges. Microorganisms are survive in all place on the biosphere because of their metabolic activity is astonishing; then come into existence in all over range of environmental conditions. The nutritional capacity of microorganisms is completely varied, so it is used as bioremediation of environmental pollutants. Bioremediation is highly involved in degradation, eradication, immobilization, or detoxification diverse chemical wastes and physical hazardous materials from the surrounding through the all-inclusive and action of microorganisms. The main principle is degrading and transforming pollutants such as hydrocarbons, oil, heavy metal, pesticides, dye's and so on. That is carried out in enzymatic way through metabolizing, so it have great contribution role to solve many environmental problems There are two types of factors these are biotic and abiotic conditions are determine rate of degradation. Currently, different methods and strategies are applied in the area in different part of the world. For example, biostimulation, bioaugementation, bioventing, biopiles and bioattenuation are common one. All bioremediation techniques it has its own advantage and disadvantage because it has its own specific application.

The range of subjects covers a wide spectrum, encompassing emerging technologies as well as actual, full-scale operations. Examples discussed include landfarming, biopiling, composting, phytoremediation and mycoremediation. Each technology is explored for its utility and capability to provide desired treatment goals. Advantages and limitations of each technology are discussed. The concept of natural attenuation is also critically evaluated since in some cases where time to remediation is not a significant factor, it may be an alternative to active bioremediation operations.

1.2 Common Source of Pollutants in Soil

Soil pollution is defined as the build-up in soils of persistent toxic compounds, chemicals, salts, radioactive materials, or disease

causing agents, which have adverse effects on plant growth and animal health. There are many different ways that soil can become polluted, such as (1) seepage from a landfill (2) discharge of industrial waste into the soil (3) percolation of contaminated water into the soil (4) rupture of underground storage tanks (5) excess application of pesticides, herbicides or fertilizer (6) solid waste seepage (7) improper installations, detonation, dismantlement of munitions. The most known chemicals involved in causing soil pollution are presented in Table 1.1.

Table 1.1 List of well-known soil pollutants

Type of pollutants	Examples
Heavy metal/trace element	As, Cd, Cr, Co, Cu, Hg, Ni, Pb, Zn, Se, Sb, F, Be, Mn
Radionuclide	^{137} Cs, ^{90} Sr, ^{40} K, ^{232} Th
Munition wastes	TNT, HMX, RDX
BTEX	Benzene, toluene, ethyl benzene, xylene
Polycyclic aromatic hydrocarbons	Napthalene, anthracene, fl uoranthene, pyrene, Benzo(a) pyrene.
Pesticides	DDT, BHC, organophosphates, aldrin, malathion, dieldrin, Lindane, Sevin, Zectrion, Atrazine, Bentazone.
Others	Pentachlorophenol, trichloroethylene, 4-chlorobiphenyl, 2,4-dichlorobiphenyl.

The environmentalists around the world are trying to overcome such huge load of pollutants in soil by several means.

1.3 Principle of bioremediation

Bioremediation is defined as the process whereby organic wastes are biologically degraded under controlled conditions to an innocuous state, or to levels below concentration limits established by regulatory authorities. Microorganisms are suited to the task of contaminant destruction because they possess enzymes that allow them to use environmental contaminants as a food. The aim of bioremediation is encouraging them to work by supplying optimum levels of nutrients and other chemicals essential for their metabolism in order to degrade/detoxify substances which is hazardous to environment and living things. All metabolic reactions are mediated by enzymes. These belong to the groups of oxidoreductases, hydrolases, lyases, transferases, isomerases and ligases. Many enzymes have a remarkably wide degradation capacity due to their non-specific and specific substrate affinity. For bioremediation to be effective, microorganisms must enzymatically attack the pollutants and convert them to harmless products. As bioremediation can be effective only where environmental conditions permit microbial growth and activity, its application often involves the manipulation of environmental parameters to allow microbial growth and degradation to proceed at a faster rate (Kumar 2011).

Bioremediation is occurred naturally and encouraged within addition of living things and fertilizers. Bioremediation technology is principally based on biodegradation. It refer to complete removal of organic toxic pollutants in to harmless or naturally occurring compounds like carbon dioxide, water, inorganic compounds which are safe for human, animal, plant and aquatic life (Pankaj and Bajpai 2012). Numerous mechanisms and pathways have been elucidated for the biodegradation of a wide variety of organic compounds; for instance, it is completed in the presence and absence oxygen.

1.3.1 The advantage of Bioremediation

• It is a natural process, it takes a little time, as an acceptable waste treatment process for contaminated material such as soil. Microbes able to degrade the contaminant and increase in numbers when the contaminant is present. When the contaminant is degraded, the biodegradative population become declines. The residues for the

treatment are usually harmless product including water carbon dioxide and cell biomass.

• It requires a very less effort and can often be carried out on site, often without causing a major disruption of normal activities. This also eliminates the need to transport quantities of waste off site and the potential threats to human health and the environment that can arise during transportation.

• It is applied in a cost effective process as it lost less than the other conventional methods (technologies) that are used for clean-up of hazardous waste. Important method for the treatment of oil-contaminated sites (Montagnolli 2015).

• It also helps in complete destruction of the pollutants, many of the hazardous compounds can be transformed to harmless products, and this feature also eliminates the chance of future liability associated with treatment and disposal of contaminated material.

• It does not use any dangerous chemicals. Nutrients especially fertilizers added to make active and fast microbial growth. Commonly, used on lawns and gardens. Because of bioremediation change harmful chemicals into water and harmless gases, the harmful chemicals are completely destroyed (Shilpi Sharma 2012).

• Simple, less labor intensive and cheap due to their natural role in the environment.

• Eco-friendly and sustainable (Dell Anno 2012).

• Contaminants are destroyed, not simply transferred to different environmental media.

• Nonintrusive, potentially allowing for continued site use.

• Relative ease of implementation (Kumar 2011).

•Effective way of remediating natural ecosystem from a number contaminate and act as environment friendly options (Sigh 2013).

1.3.2 The disadvantage of Bioremediation

• It is limited to those compounds that are biodegradable. Not all compounds are susceptible to rapid and complete degradation.

• There are some concerns that the products of biodegradation may be more persistent or toxic than the parent compound.

• Biological processes are often highly specific. Important site factors required for success include the presence of metabolically capable microbial populations, suitable environmental growth conditions, and appropriate levels of nutrients and contaminants.

• It is difficult to extrapolate from bench and pilot-scale studies to full-scale field operations.

• Research is needed to develop and engineer bioremediation technologies that are appropriate for sites with complex mixtures of contaminants that are not evenly dispersed in the environment. Contaminants may be present as solids, liquids and gases.

• It often takes longer than other treatment options, such as excavation and removal of soil or incineration.

• Regulatory uncertainty remains regarding acceptable performance criteria for bioremediation. There is no accepted definition of "clean", evaluating performance of bioremediation is difficult.

1.4 Factors affecting microbial bioremediation

Bioremediation is involved in degrading, removing, altering, immobilizing, or detoxifying various chemicals and physical wastes from the environment through the action of bacteria, fungi and plants. Microorganisms are involved through their enzymatic pathways act as biocatalysts and facilitate the progress of biochemical reactions that degrade the desired pollutant. Microorganisms are act against the pollutants only when they have access to a variety of materials compounds to help them generate energy and nutrients to build more cells. The efficiency of bioremediation depends on many factors; including, the chemical nature and concentration of pollutants, the physicochemical characteristics of the environment, and their availability to microorganisms (El Fantroussi 2005). The reason for rate of degradation is affected due to bacteria and pollutants do not contact each other. In addition to this, microbes and pollutants are not uniformly spread in the environment. The controlling and optimizing of bioremediation processes is a complex system due to

many factors. These factors are included here: the existence of a microbial population capable of degrading the pollutants, the availability of contaminants to the microbial population and environment factors (type of soil, temperature, pH, the presence of oxygen or other electron acceptors, and nutrients).

1.4.1 Biological factors

A biotic factors are affect the degradation of organic compounds through competition between microorganisms for limited carbon sources, antagonistic interactions between microorganisms or the predation of microorganisms by protozoa and bacteriophages. The rate of contaminant degradation is often dependent on the concentration of the contaminant and the amount of "catalyst" present. In this context, the amount of "catalyst" represents the number of organisms able to metabolize the contaminant as well as the amount of enzymes(s) produced by each cell. The expression of specific enzymes by the cells can increase or decrease the rate of contaminant degradation. Furthermore, the extent to contaminant metabolism specific enzymes must be participated and their "affinity" for the contaminant and also the availability of the contaminant is largely needed. The major biological factors are included here: mutation, horizontal gene transfer, enzyme activity, interaction (competition, succession, and predation), its own growth until critical biomass is reached, population size and composition (Madhavi 2012, Boopathy 2000).

1.4.2 Environmental factors

The metabolic characteristics of the microorganisms and physicochemical properties of the targeted contaminants determine possible interaction during the process. The actual successful interaction between the two; however, depends on the environmental conditions of the site of the interaction. Microorganism growth and activity are affected by pH, temperature, moisture, soil structure, solubility in water, nutrients, site characteristics, redox potential and oxygen content, lack of trained human resources in this field and Physico-chemical bioavailability of pollutants (contaminant concentration, type, solubility, chemical structure and toxicity). This above listed factors are determine kinetics of degradation (Madhavi 2012, Adams 2015). Biodegradation can occur under a wide-range of pH;

however, a pH of 6.5 to 8.5 is generally optimal for biodegradation in most aquatic and terrestrial systems. Moisture influences the rate of contaminant metabolism because it influences the kind and amount of soluble materials that are available as well as the osmotic pressure and pH of terrestrial and aquatic systems (Cases 2005).

Table 1.2 Environmental factors and optimum conditions for microbial activity for soil bioremediation

Environmental factors	Optimum conditions
pH	5.5–8.8
Temperature (°C)	15–45
Moisture	25–28% of water holding capacity
Soil type	Low clay or silt content
Oxygen	Aerobic, minimum air-filled pore space of 10%
Nutrient	N and P for microbial growth
Heavy metals	Total content 2,000 ppm
Contaminants	Not too toxic

1.5 Bioremediation Strategies

Bioremediation coverts organic pollutants mainly to carbon dioxide, water, and biomass. Some of the pollutants can also be

immobilized by binding to the humic substance fraction. Degradation may take place under aerobic, as well as under anaerobic conditions. The aerobic process is predominantly used for bioremediation and it can also be classified as ex-situ and in situ. Selection of appropriate technology among the wide range of bioremediation technologies developed to treat contaminants depends on three basic principles – the amenability of the pollutant to biological transformation, the accessibility of the contaminant to microorganisms and the opportunity for optimization of biological activity. Through appropriate selection of the technologies and adjustment of conditions, the degradation process is enhanced and the degree of degradation is improved which ultimately reduces the cost of treatment (Mohapatra 2008). Ex situ techniques are those that are applied to soil and groundwater at the site which has been removed from the site via excavation (soil) or pumping (water). In situ techniques are defi ned as those that are applied to soil and groundwater at the site with minimal disturbance. These techniques are generally the most desirable options due to lower cost and fewer disturbances since they provide the treatment in place avoiding excavation and transport of contaminants. However, in situ treatment is limited by the depth of the soil that can be effectively treated. In many soils effective oxygen diffusion for desirable rates of bioremediation extend to a range of only a few centimeters to about 30 cm into the soil, although depths of 60 cm and greater have been effectively treated in some cases (Vidali 2001) .

1.5.1 Ex Situ Methods

Land farming : It also known as land treatment or land application is an above-ground remediation technology for soils that reduces concentrations of organic pollutants through biodegradation. This technology usually involves spreading excavated contaminated soils in a thin layer on the ground surface and stimulating aerobic microbial activity within the soils through aeration and/or the addition of minerals, nutrients, and moisture. As contaminated soil is treated in thin layers of upto 0.4 m thickness, it requires a large treatment area. To promote degradation enhancement of oxygen supply as well as mixing are done by ploughing, harrowing or milling at regular intervals. The

treatment process is cost effective and can be adopted if suffi cient land is available (Mohapatra 2008).

Composting : It is applied in bioremediation as a means of degrading toxic organic compounds and perhaps lessening the toxicity of metallic contaminants in organic residues, waste and by product. Composting is similar to those that occur biologically in soil by which organic wastes are degraded by microorganisms. Temperatures are generally higher in composts than in soils, resulting in increased solubility of contaminants and higher metabolic activity in compost. High level of substrate in composts can lead to co-metabolism of organic contaminants. Mechanical treatment by grinding, mixing, and sieving out non-degradable or unwanted materials such as metals, plastics, glass, stones gives good conditions for biological treatment of compostable materials. However, the nature of the organic contaminant, composting conditions and procedures, microbial communities, and time all affect the performance of compost mechanism (Barker and Bryson 2002) .

Biopiles : It is a hybrid of land farming and composting. Excavated soils are mixed with soil amendments, placed on a treatment area, and bio-remediate using forced aeration. Contaminants are converted to carbon di-oxide and water. The basic bipile system includes a treatment bed, an aeration system, an irrigation/nutrient system and a leachate collection system. Soil piles can be up to 20 ft and may be covered with plastic to control runoff, evaporation and volatilization, and promote solar heating. If needed volatile organic compounds are treated before they entered into the air stream (Shukla et al. 2010) . Biopiles provide a favorable environment for indigenous aerobic and anaerobic microorganisms.

Bioreactors : In this process contaminated soil are treated either in solid or slurry phase. The principle of solid phase reactors is mechanical decomposition of the soil by attrition and by intensive mixture of the components in a closed container. This ensures that the contaminants, microorganisms, nutrients, water and air are brought into permanent contact. A slurry bioreactor may be defined as a containment vessel and apparatus used to create a

three-phase (solid, liquid, and gas) mixing condition to increase the bioremediation rate of soil bound and water-soluble pollutants as a water slurry of the contaminated soil and biomass (usually indigenous microorganisms) capable of degrading target contaminants. In general, the rate and extent of biodegradation are greater in a bioreactor system than in situ or in solid-phase systems because the contained environment is more manageable and hence more controllable and predictable. However, the contaminated soil requires pre treatment (e.g., excavation) or alternatively the contaminant can be stripped from the soil via soil washing or physical extraction (e.g., vacuum extraction) before being placed in a bioreactor (Vidali 2001) .

1.5.2 In Situ Methods

Bioventing : An in-situ remediation technology that uses indigenous microorganisms to biodegrade organic constituents adsorbed to soils in the unsaturated zone. It is based on vacuum-enhanced soil vapour extraction. The pressure differences in the sub-surface cause an inflow of atmospheric air and therefore, oxygen supply, as needed for aerobic degradation of contaminants. It is effective in remediating petroleum products, including gasoline, jet fuels, kerosene, and diesel fuel. If the contaminants to be treated are volatile, the extracted soil vapour has to be treated by adsorption of contaminants on activated carbon by biodegradation within a bio filter (Mohapatra 2008).

Biosparging : It exploits and stimulates indigenous microorganisms to degrade organic contaminants in saturated soil. Through boreholes, air is injected into the saturated zone (below the water table) to increase the activity of the soils indigenous microorganisms through increased oxygen dissolution. The increased oxygen enhances aerobic biodegradation of the contaminants present in the soil or groundwater. Biosparging can be used to reduce petroleum constituents that are adsorbed to soil within the capillary fringe, below the water table or dissolved in groundwater. Biosparging is commonly used at sites with mid-weight petroleum products such as diesel fuel; lighter petroleum products tend to volatilise swiftly and are removed very rapidly through sparging. Soil permeability is a key factor in the effectiveness of the technology (Vidali 2001 ; Mohapatra 2008).

Bioaugmentation : It involves the addition of microorganisms indigenous or exogenous to the contaminated sites. Two factors limit the use of added microbial cultures in a land treatment unit: (a) nonindigenous cultures rarely compete well enough with an indigenous population to develop and sustain useful population levels and (b) most soils with long-term exposure to biodegradable waste have indigenous microorganisms that are effective degrades if the land treatment unit is well managed (Vidali 2001) .

1.6 Future Perspective

Bioremediation is not a panacea but rather a "natural process" alternative to traditional physico-chemical and chemical treatment methods. What defines bioremediation and distinguishes it from simple augmentation, is the presence of an active microbial degrader population (Menendez-Vega et al. 2007) ; transforming the bioavailable contaminants in an optimized environment (Bento et al. 2005) . A study has been carried out to routinely monitor the decay of target compound or the appearance of metabolites or end products in field but such a simple approach does not differentiate abiotic from biotic processes nor does it give a measure of the physiological status or performance of the degrader population. The possible formation of toxic intermediates could either inhibit the process or lead to the occurrence of an increased risk status of the soils (Phillips et al. 2000 ; Diplock et al. 2009). Such a gap still exists between advances in laboratory research and commercial fi eld application. Inadequate knowledge to predict pollutant degradation rate and fate accurately in the field condition and lack of designated field research centers and respective technology demonstration are two main reasons of such gap. Thus, to engage a bioremediation strategy, the user must be confident that the target threshold can be met and that the contributing factors to reach this target can be quantified. The physiologic potential of microbial populations should be tested in terms of field's heterogeneity, variability, size and at the same time complexity of using living organisms should be assessed. Strategic methods for performance evaluation of respective bioremediation techniques should be designed for better understanding of the extent and rate of clean up. To speed up the application, development of innovative site characterization techniques those

are rapid, reliable and inexpensive are the urgent needs. Widely accepted bioremediation methods and criteria needs to be established followed by development of an accessible, expanded, and well documented database. Overall, more integrated and cross discipline effort would be required for proper assessment and implementation of bioremediation techniques.

1.7 Conclusion

Biodegradation is very fruitful and attractive option to remediating, cleaning, managing and recovering technique for solving polluted environment through microbial activity. The speed of unwanted waste substances degradation is determined in competition with in biological agents, inadequate supply with essential nutrient, uncomfortable external abiotic conditions (aeration, moisture, pH, temperature), and low bioavailability of the pollutant. Due to this factors, biodegradation in natural condition is not more successful leads to be less favorable. As bioremediation can be effective only where environmental conditions permit microbial growth and activity. Bioremediation has been used in different sites globally within varying degrees of success. Mainly, the advantages is greater than that of disadvantages which is evident by the number of sites that choose to use this technology and its increasing popularity through time. Generally, different species are explored from different sites and they are effective in control mechanism. Bioremediation is recognized as an alternative to traditional physico-chemical methods to restore contaminated sites. Being a cost effective, less labour intensive, safe and environment friendly technique rapid development and advances are happening in this field from the past two decades. It is found effective for a wide range of soil pollutants including PAH, PCB, CAH, pesticides, explosives, even heavy metals and radionuclide. However, in many cases, bioremediation method combines several treatment techniques and can last for a long time (years and decades) and are often applied in combination with other techniques; therefore it is difficult to estimate the efficacy of the same. In this context, more interdisciplinary research should be carried out in relation to process optimization, validation, its impact on the ecosystem and the effectiveness and predictability should be demonstrated to make it a generally accepted technique.

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10. Emotional Intelligence and Self-Confidence of B.Ed. Teacher Trainees

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Abstract

The purpose of the present study is to study the Emotional intelligence and self- confidence of B.Ed. teacher trainees of Chamarajanagara. For the present study, descriptive survey method was adopted. The samples of 200 B.Ed. teacher trainees were selected from two B.Ed. colleges of Chamarajanagara. Emotional Intelligent Inventory by Ankul Hyde, Sanjyot Pethe and Upinder Dhar and Self-confidence inventory by M. Basavanna (1975) was used to collect the data. Findings of the study revealed that, there is no significant difference in Emotional intelligence and Self-confidence of male and female, urban and rural B.Ed. teacher trainees. Study also found that, there is significant positive relationship between Emotional intelligence and Self-confidence of B.Ed. teacher trainees.

Key words*: Emotional intelligence and Self-confidence.*

Introduction

Our formal educational system tends to lay more emphasis on "Learning to know" and to a lesser extent on "Learning to do" (Sharma, 2005). But an ideal educational system should be vitally conceived in a more comprehensive manner. Both *"Learning to live together"* and *"Learning to be"* should be stressed for the all round development of an individual. These types of learning are the chief issues to be dealt with, in today's educational structure. Due to the negligence of these factors, incidents such as suicide, drug addiction, aggressiveness, running away from home etc., do

occur in our society. Hence, emotional aspects of the individual should be stressed for the total development. Such a vision should enlighten and guide future educational reforms and policies in relation to both contents and methods.

The National Policy on Education (1986) introduced the concept of Continuous and Comprehensive Evaluation (CCE). National Curriculum Framework (2005) strongly emphasized the need of replacing traditional system of evaluation with scheme of new one i.e., continuous and comprehensive evaluation. The evaluation needs to be comprehensive in the sense that we have to assess or evaluate the teaching learning outcomes in terms of behavioural changes brought about in all the three domains - cognitive, conative and affective.

It is a general comment that, our present system of education is giving importance only to the cognitive domain where it is neglecting other important domain i.e., affective domain. Now-a-days we can observe that our parent community is exerting pressure on their children to achieve excellence without knowing their ability and giving importance to their interest, which is leading to the problems of suicide, drug addiction and illegal activities commonly observed in the daily newspaper. Moreover, the low-test scores and accountability standards have been the focus of our education reform and criticism directed to public education at all levels.

Need and Importance of the Study

In spite of much advancement in technology and educational reforms, the educational institutes face certain challenges and issues related to the education system. These issues are mainly concerned with the poor academic performance, demands and expectations of parents, declining quality of education, heavy workload on teachers etc. such issues make it difficult for the teachers to cope with the academics as well as societal demands of the parents. Social pressure on teachers could result in emotional disturbance and challenges. Moreover, the societal demands make it difficult for them to balance their emotions at work. In this regard, emotional intelligence serves as a significant tool that helps the teachers to adjust their emotions and meet the societal challenges that disturbs the balance of their

emotions. Therefore, there is need to improve their emotional intelligence so that the performance could be increased and positive work related outcomes could be achieved. In 1990, *Peter Salovey* and *John Mayer* defined emotional intelligence as "a form of social intelligence that involves the ability to monitor one's own and others feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action".

Teachers have a significant role in society as they interact with the students to transfer their knowledge to them. For transferring knowledge in a proper way they should be emotionally stable. Teachers should have effective skills physically as well as mentally which are named as emotional intelligence. Emotional intelligence is really helpful for teacher's performance as it would guide them to communicate clearly, lead others in a proper way which creates productive interaction at work as well as personal life. According to *Marc Brackett*, "Emotions can either enhance or hinder your ability to learn," which impacts attention and memory function. If a student is anxious or agitated, they may not be able to focus on what is being taught. In order to be successful in interpersonal and career domain, the ability to read and manage emotions in social contexts is very important. Emotional intelligence is an important psychological factor that has a deep effect on teacher trainee's abilities, self confidence and performance. In the past many attempts have been made to find out the problems of teacher training course. *Lalitha M.S (1981)* studied the teaching competency, *Gupta. P. N (1985)* and *Rai. V.K (1982)* studied the problems of secondary teacher training colleges, *Joshi. A.N (1984)* studied the teaching skill clusters. Hence, the investigator made an effort to find the Emotional intelligence and Self-confidence of B.Ed. teacher trainees.

Objectives of the Study

1. To compare the Emotional Intelligence of B.Ed. teacher trainees of Chamarajanagara in the following categories,
    a) Male and Female
    b) Urban and Rural
2. To compare the Self-confidence of B.Ed. teacher trainees of Chamarajanagara in the following categories,
    a) Male and Female

Urban and Rural

To study the relationship between Emotional intelligence and Self-confidence of B.Ed. teacher trainees of Chamarajanagara.

Hypotheses of the Study

There is no significant difference in Emotional intelligence of B.Ed. teacher trainees of Chamarajanagara in the following categories,

Male and Female

Urban and Rural

There is no significant difference in Self-confidence of B.Ed. teacher trainees of Chamarajanagara in the following categories,

Male and Female

Urban and Rural

There is no significant relationship between Emotional intelligence and Self-confidence of B.Ed. teacher trainees of Chamarajanagara.

Methodology

A descriptive survey method was used for the present study. The population constitutes B.Ed. teacher trainees studying in Chamarajanagara district. A sample of 200 B.Ed. teacher trainees (81 male and 119 female) of Chamarajanagara were selected randomly. Data was collected with the help of Emotional Intelligent Inventory by Ankul Hyde, Sanjyot Pethe and Upinder Dhar and Self Confidence Inventory by M. Basavanna (1975).

Data Collection Procedure

The researcher personally visited twoB.Ed. Colleges located in Chamarajanagara district with the research tool. The questionnaire was distributed to 200 B.Ed. teacher trainees and they were asked to complete all the items in the space given. The researcher clarified the doubts of the student teachers while filling the questionnaire. The filled questionnaires collected and the data for each question has been quantified

and tabulated in order to test the hypotheses formulated for the study.

Statistical techniques

Descriptive statistical measures (Mean and Standard deviation) used to describe the characteristics of the sample; test of significance of difference between means (t-test) was used to study whether there is a significant difference with regard to gender and locality and Pearson's co-efficient of correlation method to find out the relationship between the variables.

Analysis and Interpretation of the data

In order to present the result systematically the hypothesis wise interpretation has been given in table.

Objective-(1): To compare the Emotional Intelligence of B.Ed. teacher trainees of Chamarajanagara in the following categories,

Male and Female

Urban and Rural

Hypothesis-(1)(a): There is no significant difference in Emotional intelligence of male and female B.Ed. teacher trainees of Chamarajanagara.

Table-1: Mean, SD, t- value of Male and Female B.Ed. teacher trainees with regard to Emotional intelligence

S.N	Variable	N	Mean	SD	df	t-value	Level of Significance
1	Male teacher trainees	81	129.19	16.9	198	1.31	NS*
2	Female teacher trainees	119	136.09	14.7			

Table-1reveals that, obtained t-value 1.31 is less than critical value 1.97 at 0.05 level of significance. Hence, the formulated null hypothesis number (1)(a) is accepted. Therefore, it may be concluded that, there is no significant difference in emotional intelligence of male and female B.Ed. teacher trainees of Chamarajanagara.

Hypothesis-(1)(b): There is no significant difference in Emotional Intelligence of urban and rural B.Ed. teacher trainees of Chamarajanagara.

Table-2: Mean, SD, t- value of Urban and Rural B.Ed. teacher trainees with regard to Emotional intelligence

S.N	Variable	N	Mean	SD	df	t-value	Level of Significance
1	Urban teacher trainees	140	136.01	14.1	198	1.32	NS*
2	Rural teacher trainees	60	128.5	16.3			

Table-2 reveals that, obtained t-value 1.32 is less than critical value 1.97 at 0.05 level of significance. Hence, the formulated null hypothesis number (1)(b) is accepted. Therefore, it may be concluded that there is no significant difference in emotional intelligence of Urban and Rural B.Ed. teacher trainees of Chamarajanagara.

Objective-2: To compare the Self-confidence of B.Ed. teacher trainees of Chamarajanagara in the following categories,

a) Male and Female
b) Urban and Rural

Hypothesis-(2)(a): There is no significant difference in Self-confidence of male and female B.Ed. teacher trainees of Chamarajanagara.

Table-3: Mean, SD, t- value of Male and Female B.Ed. teacher trainees with regard to Self-confidence

S.N	Variable	N	Mean	SD	df	t-value	Level of Significance
1	Male teacher trainees	81	41.78	10.3	198	0.59	NS*
2	Female teacher trainees	119	40.8	12.8			

Table-3 reveals that, obtained t-value 0.59 is less than critical value 1.97 at 0.05 level of significance. Hence, the formulated null hypothesis number (2)(a) is accepted. Therefore, it may be concluded that there is no significant difference in Self-

confidence of Urban and Rural B.Ed. teacher trainees of Chamarajanagara.

Hypothesis (2)(b) : There is no significant difference in Self-confidence of urban and rural B.Ed. teacher trainees of Chamarajanagara.

Table-4: Mean, SD, t- value of Urban and Rural B.Ed. teacher trainees with regard to Self-confidence

S.N	Variable	N	Mean	SD	df	t-value	Level of Significance
1	Urban teacher trainees	140	39.28	10.9	198	0.17	NS*
2	Rural teacher trainees	60	45.83	11.7			

Ttable-4 reveals that, obtained t-value 0.17 is less than critical value 1.97 at 0.05 level of significance. Hence, the formulated null hypothesis number (2)(b) is accepted. Therefore, it may be concluded that there is no significant difference in Self confidence of Urban and Rural B.Ed. teacher trainees of Chamarajanagara.

Objective- 3: To study the relationship between Emotional intelligence and Self-confidence of B.Ed. teacher trainees of Chamarajanagara.

Hypothesis-3: There is no significant relationship between Emotional intelligence and Self-confidence of B.Ed. teacher trainees of Chamarajanagara.

Table -5: Correlation of Emotional intelligence and Self confidence

S.N	Variable	N	df	'r' value	Level of significant
1	Emotional intelligence	200	198	0.52	Positive significant
2	Self confidence	200			

The degree of correlation between Emotional intelligence and Self-confidence of 200 teacher trainees is moderate. The value of correlation between Emotional intelligence and self-confidence is

0.52 is positive. Hence, the hypothesis (3) is rejected and concluded that, there is significant positive relationship between Emotional intelligence and self-confidence of B.Ed. teacher trainees of Chamarajanagara.

Findings of the study

The findings of the present study are as follows,

1. There is no significant difference in Emotional intelligence of male and female B.Ed. teacher trainees.
2. There is no significant difference in Emotional intelligence of urban and rural B.Ed. teacher trainees.
3. There is no significant difference in Self-confidence of male and female B.Ed. teacher trainees.
4. There is no significant difference in Self-confidence of urban and rural B.Ed. teacher trainees.
5. There is significant positive relationship between Emotional intelligence and Self-confidence of B.Ed. teacher trainees.

Educational Implications

On the basis of the results, the following are the educational implications of the findings of the present study,

1. Result revealed that, significant positive relationship between Emotional intelligence and Self-confidence of B.Ed. teacher trainees. Hence, the inclusion of emotional intelligence in the curriculum is very much essential. Emotional intelligence should be infused into all areas of the curriculum, not dealt with in isolation. Classes on emotional intelligence in primary and secondary school curriculum are effectual in raising emotional intelligence and reducing emotional and behavioral problems which can interfere with the learning process.
2. Inclusion of a focus on emotional intelligence as part of the B.Ed. curriculum could lead to a variety of positive personal, social and societal outcomes. Increasing emotional intelligence may not only facilitate the learning process, improve career choice and likelihood of success, but could also enhance the probability of better personal and social adaptation in general.
3. The educational experience would tend to be more balanced or holistic as it would focus on educating the whole personality.
4. A teacher who has high emotional intelligence might be more likely to adopt a humanitarian (as opposed to a more controlling

or dictatorial) teaching style, which nurtures the development of their self-esteem and encourages students to take a more active approach to learning (Ex: ask more questions, develop a personal stance on controversial issues rather than automatically adopt the professor's position, apply relevant concepts to everyday life).

5. Having a high level of emotional intelligence will serve you well in your relationships in the workplace and in all areas of your life. Hence, the following activities helps in developing emotional intelligence among teacher trainees,
   a) Self awareness exercise, Identifying the negative emotions, Self evaluation, Self expression, Stress management, Empathy as a daily habit.
   b) Practice observing how you feel, Pay attention to how you behave,Take responsibility for your feelings and behavior, Practice responding, rather than reacting, Practice empathizing with yourself and others.

Limitations of the Study

The major limitations are listed below,

a) The study is restricted only to B.Ed. teacher trainees of Chamarajanagara.
b) The statistical samples of 81individuals are male and 119 individuals are female B.Ed. teacher trainees of Chamarajanagara.

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11. Linguistics: An Overview

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ABSTRACT

Linguistics is the basis of the study of any language. Linguistics is the study of written and unwritten literature, non-performing native, and foreign/national and international, developed and undeveloped languagesof all types. Therefore, its usefulness is paramount, and each developed and developing nation is seen differently in its study and follow-up. Because it is only from Linguistics that it is known that, what is the relation of language to language? What are its parts? How did the language originate? Is language a traditional commodity, or an acquired commodity? What are the families of languages? What is the cultural significance of language? Which is the native language of any language family? Are all languages developed from the same source or do they have different sources. How did any language develop? How does it remain in an undeveloped state? How interconnected languages become completely different and separate over time. How do languages develop and take on new forms? In this way, the curiosity related to language is satisfied only through Linguistics. Linguistics is useful not only in the study of languages, but also in the study of literature. Because the complete knowledge of the creation and preservation of various languages used in literature is obtained only through Linguistics and Linguistics itself tells, how a dialect gradually takes the form of a dialect. How, taking the form of a folk language, it is used in literary creation and folk behaviour. How it becomes a refined language and becomes useful in the creation of high level literature. Linguistics itself helps in understanding the expression and expressive skills of literature. It is only from Linguistics that it is known that how a language is able to agree in expressing the intense feeling of literature by adopting different word forms and

how the words expressing the poignant feeling of literature are created and selected in it.

Keywords: Linguistics, Literature, Scientific, Language, Comparative, Structural, Historical

The scientific study of language is called Linguistics. In ancient times, the study of language has been done in Nirukta, Shabdanushaasan, Grammar and Pratisakhya etc. It has been two centuries since the process of modern Linguistics began. Various names have been given to Linguistics from time to time. First of all, it was called Comparative Grammar in view of its comparative study. After some time it was seen that there is not only comparative study of grammar but also comparative study of other aspects of language, so the name Comparative Philology was kept in its place. This name continued for some time, then it was realized that there is always a comparative approach in such studies, so due to the automatic expression of the comparative sense, the name Philology came into play. The most common word in it is Linguistics. In the present day usage, the term Linguistics has become synonymous with Linguistics. Linguistics being the most prevalent, intuitively expresses the sense of scientific study of language.

Linguistics: Definition

The systematic and organized study of language is called Linguistics. In this, human-faced and written language forms are studied. Indian and Western scholars have defined Linguistics from time to time. Dr. Devendra Sharma has defined Linguistics in this way, “Linguistics simply means the science of language and science means specific knowledge. Thus the specialized knowledge of language would be called Linguistics. Dr. Bholanath Tiwari has defined Linguistics in this way, "Linguistics is the science in which the study of language specific, many and general from the contemporary, historical, comparative and experimental point of view and the principles of the subject are determined." Dr. Devi Shankar, while giving importance to the word Linguistics on language and Linguistics, has written, “Linguistics, that is, the science of language, is called Linguistics. Linguistics deals with the scientific study of language. Dr. Mangal Dev Shastri has written "Linguistics is the science that deals with the comparative

study of human language in general, the composition and history of a particular language, and finally the mutual similarities and characteristics of classes of languages, regional languages or dialects." In this way, in the context of the definition of Linguistics, every opinion of Indian and western scholars has its own importance. The directions of scientific study of language may be different, but it is essential to have a scientific approach.

Linguistics: Scope

The field of Linguistics is very wide. Its scope extends to all the languages of the world. Linguistics is related to the language of human beings, so it extends to the thinking of human beings. In this, along with literary languages, various dialects are also studied. In today's time the study of dialects has become an important part of Linguistics. In this, along with the critical, analytical study of language, the origin and development is also studied. Linguistics is the study of languages related to the present and the past. In this way, it can be said that on the one hand, those languages are studied which are no longer used in oral form, only their literature is received. Linguistics is related to different periods/times of language. Different units of language Sounds, letters, words, phrases, sentences and meanings are different dimensions of Linguistics.

Linguistics: Directions of Study

Linguistics deals with the specific study of one language or more than one language. Reflection is done on spoken or written or both forms of language. The methods of studying Linguistics are Descriptive Method, Historical Method, Comparative Method, Experimental method, Structural Method.

Descriptive Method

When a specific period of a language is studied, it is called descriptive study. A similar language study has been presented in the Ashtadhyayi of the famous scholar Panini. In this, while doing a descriptive review of nouns, pronouns, verbs and adjectives of the language, sounds, words, sentences etc. are considered. While studying all the units of the language, the rules related to them are determined. Only a limited period of language is studied, yet it has been of special importance since ancient times. In this type of study, while contemplating on the sages and subtle forms of

language, along with the body of its sound, words etc. In the present time, there is a special inclination of scholars towards the study of language of descriptive method.

Historical Method

In this method, the chronological development of a particular language is studied. If the descriptive study of the periods of a particular language is arranged chronologically, then it becomes a historical study. The study of various streams of language development or change is done in this method. If you want to study Hindi in the order of development of Indo-Aryan languages, then Hindi language will be studied by considering Vedic Sanskrit, cosmic Sanskrit, Prakrit, Apabhramsa languages in the same way. If we want to know the origin and development of Hindi words, then we have to study Hindi chronologically along with Sanskrit, Pali, Prakrit and Apabhramsa. Language is ever-changing. It is natural for the language to change with the change of time and place. From time to time, not only in the sounds, words and sentences of the language, but also the meaning keeps on changing. This change is known to us only through the study of the historical method.

Comparative Method

The method of language study in which the sounds, letters, words, phrases, sentences and meanings of two or more languages are compared, is called comparative method of language study. Under this study, by making a comparative study of the forms of different periods of a language, get a clear knowledge of its developmental status. To know the equivalence and disparity of different dialects of a language has also emerged from this method of language study. There is strong evidence of this that initially the name Comparative Philology was given for it. It is also true that without adopting comparative study approach, it is very difficult to determine any rule. Comparative study is also necessary in determining the language family. Comparative study is most useful to clearly outline the sovouriness, simplicity or characteristics of a language.

Experimental method

The importance of language study is increasing day by day. In view of this, this new method of language study has been started. In this, the living form of language is studied in a practical

way. This study is related to a particular area. That's why it is called field work. In the study of this method, the scholar has to go to a particular area and have close contact with the concerned language-speaking. Experimental study also studies the use of idioms, proverbs etc., used in the speaker's language along with the sounds, words, sentences of a language or dialect. From the experimental study itself, the matter of spontaneity, naturalness and clarity of expression is coming to the fore. As the talk of the use of regional languages is gaining momentum, the study of this method is gaining momentum. At present, the experimental method is also adopted to know the language characteristics of different scholars. The study of experimental method is of special importance in modern Linguistics.

Structural Method

The method in which the study of language is done on the basis of its structure is called structural method of language study. This method of language study is based on the subtle reflection of the various units of language. In this, language is discussed and analyzed from organizational point of view. In the structural study of language, special attention is paid to interrelationships. In the study of descriptive language also structural forms emerge everywhere. The distinctive difference between the study of descriptive method and structural method is that in the descriptive method the units of language are studied individually, whereas in structural study the traditional relationship of different units is also considered. As in the structural study of the word काम contemplates on the written form of its various sound-marks क्+आ+म्+अ and the pronounced form of different sounds क्+आ+म्. In this way, in the study of word structure, we also consider the position of use in sentences along with its related sounds. This gives clear evidence of the written and spoken forms of the said word. At present, special emphasis is being laid on the structural method of language study.

Linguistics: Relation to Other Sciences

Linguistics is the scientific study of language or languages and language is a major part of life because without language there can be no life and no work of the world. Language is the basis of all activities of human life. It is through language that we become

aware of each other's thoughts. We express our wishes and aspirations and people are influenced by us only by our behaviour and inspire others to influence. Language itself helps us in scientific research and by language we agree to open the various mysteries of nature by moving forward on the path of progress. When language holds its authority in all areas of our life, knowledge science etc., then it is natural for those who study language scientifically to have general knowledge of other branches of science and exponents of other branches from various disciplines. Anyway, Linguistics is perfected in its fields by getting help from all branches of science and takes useful material from various scriptures and gives a scientific explanation of the language. Apart from this, when all the words represent their subjects by surveying the mysteries of life and the world through their respective knowledge sciences. Then the interrelationship of all the scriptures is also inevitable. The reason for this is that Linguistics is closely related to various disciplines in the scientific study of language, the main tool of the subject exponent. It is very important to know the grammar of any language through Linguistics and grammar to get complete knowledge related to correct pronunciation, correct use and correct writing. Grammar is not only the foundation of language but it is also the backbone. Grammar is not only a divine vision of any language, but it is also a guide and it is not only speaking and writing of any language and it is also a place of light and through which a man wandering in the deep darkness of all language attains the right path. Therefore, there is a close relationship between grammar and Linguistics but grammar pervaded in Linguistics is an art. Linguistics is a science.

1. Grammar remains confined to one language and whereas Linguistics also deals with comparative analysis of different languages.
2. Grammar makes interpretative exposition of only the perfect and perfect forms of a language. And whereas Linguistics makes all kinds of interpretative exposition and interpretation, both proven and unproven.
3. In grammar, only the forms of noun, pronoun, verb, number, adverb etc. are discussed and whereas in Linguistics, in addition to these language forms, sounds, sentences, meanings, words etc. are also studied.

4. Grammar can tell only so far that the word Aag is a noun, singular number, feminine gender etc. And whereas Linguistics also tells how it evolved from its original form Agni to form Agni first and later Agni to Aag Done.
5. Grammar is always limited to a certain time and whereas the field of Linguistics is limited and infinite.
6. Grammar discusses language only on the study of rules and while Linguistics determines the rules on the basis of the place of science.
7. Grammar is a positional, a discipline of knowledge and whereas Linguistics is a dynamic store of knowledge.
8. Grammar makes a philosophical arrangement of language and whereas Linguistics presents a scientific explanation by classifying and analyzing language.
9. Grammar only explains the rules, by-laws and exceptions in detail, whereas Linguistics deals with historical and comparative explanation.

Each word also represents the history of evolution. Despite this difference, grammar has proved to be very useful for Linguistics because there are two types of grammar. One is Descriptive Grammar and other one is Explanatory Grammar. The nature of the word forms of a language, classification and analysis on the basis of suffixes, determines various rules. For example, the Ashtadhyayi composed by Panini is the best descriptive grammar and explanatory interpretation of Sanskrit. Explanatory grammar refers to the philosophical explanation of a language. Maharishi, Patanjali's Mahabhashya, the best explanatory grammar of Sanskrit language. Both the above grammars have a chapter in descriptive Linguistics because on the basis of its historical, comparative and literary analysis, Linguistics uses it according to its own and it is known that what was the root word of such word? Under what circumstances did the disorder arise in him? How did it evolve to its present form? Grammar itself introduces Linguistics to various sounds, forms, words, sentences. Grammar itself informs Linguistics about the nature and use of Linguistics, and grammar itself tells Linguistics that how many sounds are prevalent in a spoken language? How many characters are used? What is the method of their pronunciation? Which of them has a meaningful sound? And which sounds are meaningless? What are the present

forms of words and what are the specialties in their usages? In this way, grammar presents the most raw materials for Linguistics to perform its work and grammar itself provides the direction of exploration of Linguistics. Linguistics is also called the grammar of grammar, due to the history of origin and development of the proven and performance forms of grammar and due to scientific analysis of the material presented by grammar. Apart from this, Linguistics gets most of the material from phonology, morphology, wordology, syntax, semantics, grammar itself. That is why Linguistics and grammar are closely related to each other.
Linguistics and Literature

Literature itself is a kind of permanent form of language. Therefore, the study of Linguistics has a very important basis. There is also less opportunity for linguistic study of a language which does not have literature. At least historical and comparative study of that language is not possible. It is possible to understand the historical development of Vedic, Sanskrit, Prakrit, Apabhramsa, etc. languages because they have extensive and rich literature, otherwise these languages would also have the same condition as Munda, Santhali or thousands of other such languages of the world. Hundreds of languages, which could have proved to be very useful from a linguistic point of view, have disappeared today and the path of their study is also blocked due to lack of literature. What is the difference between Ancient English to Medieval English and Medieval to Modern English? And when did that happen? These can be discussed only on the basis of available literature. We must have had some language here even before the language used in Rigveda. But due to lack of his literature, we are unable to say anything about him today.

Not only from the historical point of view, but also from the comparative point of view, literature presents sufficient material for linguistic study. It is only through literature that it is possible to know whether Greek, Latin, Iranian, Slavic or many other languages of Europe, which we place in today's Indo-European family, came from the same source. It is possible that other languages of this family have been used in different places, but today it is impossible to say anything about them due to lack of literature. It means that literature mainly produce the material for historical and comparative study of language.

There Linguistics is also no less useful for literature where literature is useful in the study of Linguistics. Many such words are found in ancient literature whose meaning not understood easily. Sometimes it is also seen that the same word was used in another sense earlier and is being used in another sense today. For example, the meaning of the word 'Asur' changed from Deity to Demon. The solution of such places becomes accessible with the help of Linguistics. Linguistics removes doubts by clarifying the reasons for the change in sound or meaning. Not only this, to analyze literature on linguistic basis, an independent science called style science has been developed which indisputably proves the sub-functional sense and interdependence of literature and Linguistics.

Linguistics is also very useful for archaeological discoveries and investigations because while tracing the original origin and original source of languages through Linguistics, knowledge of living customs, eating habits, intellectual development, political achievement, religious beliefs etc. It is because of Linguistics that scholars, while exploring the origin of Aryan language, discovered the original place of Aryans, their original abode, their native language, their way of life, their customs, their religious beliefs, their cuisines etc. Proper knowledge has also been obtained. Not only this, only through Linguistics, the correct knowledge of the origin and development of ancient civilization and culture can be available, and from this the understanding of the gradual development of mankind can be done well. Because it is Linguistics that explains to us which culture is the oldest in the world and which civilization developed in the world when. Adequate knowledge of the purity of any language and the impurity of their use is also obtained through Linguistics because Linguistics itself explains to us how the letters in the words of languages become anagrams. Somewhere vowels and consonants appear and sometimes vowels and consonants disappear. Somewhere the words are put in a new form by etymology. In which sometimes an impure word becomes prevalent in the language and even after trying a lot, it cannot be removed from the mind of the common man.

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12. Impact of Climate Change on Humans, Animals and Birds

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Abstract

Heat stress conditions as a result of global warming, high air temperatures, and higher frequency of extreme weather events and droughts affect human, animal health and welfare. Heat stress affects crop production, cattle, ewe, goat, and buffalo milk production and meat production. Increase in vector-borne, water and food-borne diseases, acute and chronic respiratory conditions like asthma and allergies, heat-related and extreme weather-related morbidity and mortality due to climate change.

Keywords: Climate change, heat stress, milk production, diseases

Introduction

Climate refers to average weather conditions over many years. Climate change related to change in those average weather conditions. Climate is one of many issues with the potential to alter disease states and is expected to exert a devastating negative effect on the health of humans and animals (Rabinowitz & Conti, 2013). The direct effects of climate change on health may be due to increased temperatures, frequency and intensity of heat waves (Gaughan *et al*., 2009). Direct outcomes of climate change include trauma related to extreme weather events, like floods, hurricanes, wildfires and heat waves. Indirect mental health outcomes of climate change occur through social, economic and environmental disruptions due to a changing climate [Berry *et al*., 2010; Fritze *et al*., 2008]. The impact of climate change on physical health occurred through a rise in vector-borne, water and food-borne diseases, an increase in acute and chronic respiratory conditions like asthma and allergies and heat-related and extreme weather-related morbidity and mortality [Costello *et al.,* 2009; McMichae

et al., 2006]. Extreme heat events and humidity have been related to increased hospitalization for mood and behavioural disorders, including schizophrenia, madness and neurotic disorders [Chand & Murthy, 2008; Wang & Horton, 2015].Coastal and near-shore habitats and their ecosystems are more exposed to the effects of climate change (Barbier, 2010).

Impact on Agriculture: Temperature and precipitation play a pivotal role in determining farm outcomes (Auffhammer and Schlenker, 2014). The production of some vital crops such as rice and wheat could decline considerably with climate change (Achanta, 1993).

Impact on animals and birds: Heat stress can contribute to the occurrence of lameness in dairy and beef cows (Shearer, 1999). A greater threat of mortality during the hottest months (Dechow and Goodling, 2008; Vitali *et al*., 2009) and during extreme weather events (Hahn *et al*., 2002; Vitali *et al*., 2015). Chronic exposure to heat stress lead to impaired immune response in avian species (Regnier and Kelley,1981). Severe heat stress reduced immunoglobulins (IgG and IgA) in colostrum of dairy cows with negative consequences on immunization and survival of newborn calves (Nardone *et al.,* 1997). Increase of mortality in Mecheri sheep during summer season (Purusothaman *et al*., 2008). High producing milch cows generate additional metabolic heat than low-producing dairy cows. Therefore, high-producing dairy cows are more susceptible to heat stress. Consequently, when metabolic heat production increases in combination with heat stress, milk production declines (Berman, 2005; Kadzere *et al*., 2002). Heat stress also affects milk production of ewe, goat and buffalo (Finocchiaro *et al*., 2005; Nardone *et al*., 2010). Beef cattle with thick coats, and darker colors are more vulnerable to warming (Nardone *et al.*, 2010). Heat stress may reduce body size, carcass weight, and fat thickness in ruminants (Mitloehner *et al*., 2001; Nardone, 2000). The larger pigs will have more reduction in growth, carcass weight and feed intake (Nardone *et al.,* 2010). Piglets survival may be decreased because of sows feeding is less during suckling periods with temperatures greater than 25^0C, which reduces the milk yield of the sow (Lucas *et al.*, 2000). The poultry business may also be compromised by low production at temperatures higher than 30^0C (Esminger *et al*.,1990). Heat stress

in birds will reduce body weight gain, feed intake and carcass weight, protein and calorie content (Tankson *et al.,* 2001). Heat stress in hens will diminish reproduction efficiency and consequently egg production because of reduced feed intake and disturbance of ovulation function (Nardone *et al.,* 2010; Novero *et al.,* 1991). Egg quality, such as egg weight, shell weight and thickness may also be negatively affected under hotter conditions (Mashaly *et al*., 2004).

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13. Types of Pollution and Pollution Problems

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Abstract

The pollution may be classified as Air pollution, water pollution, soil/land pollution, noise pollution, radioactive pollution and thermal pollution. These types of pollution causing various diseases like respiratory diseases, skin diseases and cardiovascular diseases, Alzheimer's and Parkinson's diseases and cancer of the lungs, liver and bladder. Thus, threatening the environment, humans, plants, animals and all living organisms.

Keywords: Pollution, water cancer, environment, pollutants.

Introduction

Pollution is the introduction of dangerous materials into the environment. These dangerous materials are known as *pollutants.* Long and short term contact to air suspended toxicants has a diverse toxicological impact on human including respiratory and cardiovascular diseases, neurological disorders, the eyes diseases, skin diseases, and long-term chronic diseases such as asthma and skin cancer.

Air Pollution

Air pollution is a combination of solid particles and gases in the air. Air pollution can cause serious environmental damages to the groundwater, soil, and air. (Mellouki *et al*., 2016). It is also a serious warning to the variety of life. Detrimental effects of environmental contaminants on the extinction of animals and plants species (Camargo and Alonso, 2006). Particle pollutants are mixture of particles found in the air. Particle pollutants are major parts of air pollutants (Azam *et al*., 2016). Particle pollution linked with most of pulmonary and cardiac-associated morbidity and mortality [Sadeghi *et al*.,2015; Sahu *et al*., 2014] . Ozone induces a variety of toxic effects in humans and experimental animals at concentrations that occur in many urban areas. (Lippmann,

1989).Carbon monoxide poisoning may include headache, dizziness, weakness, nausea, vomiting, and finally loss of consciousness. The major health concerns associated with exposure to high concentrations of Sulfur Dioxide include respiratory irritation and dysfunction, and also aggravation of existing cardiovascular diseases. Fetuses and children are highly susceptible to even low doses of lead. (Farhat *et al*., 2016). Lead gathers in the body in blood, bone and soft tissue. Because it is not readily excreted, lead can also affect the kidneys, liver, nervous system and the other organs. (Farhat *et al*., 2005).Mental retardation, learning disabilities, impairment of memory, hyperactivity, and antisocial behaviors are of adverse effects of lead in childhood. (Lidsky & Schneider, 2006). Air pollution is also considered as the major environmental risk factor for some respiratory diseases such as asthma and lung cancer. (Brunekreef *et al*., 2006). Studies have shown the direct association of air pollutant exposure and cardiac-related illnesses. (Nogueira, 2009).The relationship between criminal activity and age-inappropriate behaviors with air pollution (Newman *et al*., 2013). Studies have also revealed the association between air pollution and higher risk of neuroinflammation, (Calderón-Garcidueñas *et al*., 2008 a) , Alzheimer and Parkinson diseases. (Calderón-Garcidueñas *et al*.,2008 b). Immune system dysfunction can be affected by several environmental factors such as poor air quality. (Vawda *et al*., 2014). Toxic air pollutants can cause damage to organs when inhaled or absorbed through the skin.(Potera,2007) .Traffic-related air pollutants affect skin aging and cause pigmented spots on the face (Drakaki *et al*., 2014). Air pollution can also cause continuing damage to nerves, brain, kidneys, liver and other organs.

Water Pollution

Water pollution is the pollution of water bodies (like oceans, seas, lakes, rivers, aquifers, and groundwater) usually caused due to humans. Water pollution is the change in the physical, chemical or biological properties of water that will have a detrimental consequence of any living organism. Humans and animals can be exposed to heavy metal toxicity through the food web, direct consumption of water containing metal or via inhalation (Popa and Petrus, 2017). Dyes block sunlight penetration into water bodies

and diminish dissolved oxygen, thus leading to death of photosynthetic organism and other organisms within the aquatic environment (Inyinbor *et al*., 2016). Human drinking of water polluted with arsenic can cause cancer of the lungs, liver and bladder. Kidney and lungs damage as well as bone fragility may result when cadmium containing water is consumed. Exposure to lead can severely harm the brain and kidneys. In children, lead exposure even at very small concentration may sluggish down learning, cause memory loss, affect attention and response functions and generally make children aggressive (Verma *et al*., 2017, Sun *et al*., 2017). In pregnant women, elevated levels of exposure to lead may cause miscarriage, whereas in men, it can harm the organs responsible for sperm production.

Soil Pollution

Soil pollution is defined as the presence of toxic pollutants in the soil, in very high concentrations to pose a risk to human health and the ecosystem. Acid rain may negatively affect plants and important microbes that live in the soil, thereby affecting the food chain (Chen *et al*., 2012). Oil spills typically occur in a sea environment. However, it can also occur on soil. Such a situation can affect soil chemistry and also disturb plant and animal life (Apiratikul *et al*., 2020).

Noise Pollution:

Noise pollution can be *defined* as any disturbing or unwanted noise that harms humans or wildlife. Children seem to be more in danger than adults to noise induced hearing impairment. Noise pollution may cause anxiety, stress, nervousness, nausea, headache, emotional instability, argumentativeness,sexual impotence, changes in mood, increase in social conflicts, neurosis, epilepsy and psychological disorder (Berglund and Lindvall, 1995). Noise pollution hinders with the ability to comprehend normal speech and may direct to a number of personal disabilities, handicaps, and behavioural changes. Childrens in the noisy environments have been shown to have elevated blood pressures and elevated levels of stress-induced hormones (Basner *et al*., 1995)

Radioactive Pollution

Radioactive pollution refers to the pollution of living organisms and their environment due to the release of radioactive substances into the environment. The contamination caused by the radioactive pollutants in the environment is a crucial issue that affects the quality of public health and the environment. Acute somatic effects of radiation consist of skin burns, vomiting, hair loss, temporary sterility or sub fertility in men and blood changes. Chronic somatic effects of radiation include the development of eye cataracts and cancers (Upton, 1982).

Thermal Pollution:

Thermal pollution is defined as the degradation of water quality by any process that changes ambient water temperature (Langford, 1990). Thermal pollution is the increase or decrease in the temperature of a natural body of water caused by humans. Elevated water temperatures decline oxygen levels, which can kill fish and change food chain composition, reduce species biodiversity and promote attack by new thermophilic species (*Goel, 2006 ; Laws, 2018).*

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14. Generalized Vague Structure Space

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Abstract

In this paper we introduce the concept of generalized vague structure space. Also, some interesting properties of compactness in generalized vague structure space are discussed. Further we discuss the properties of vague generalized bistructure space and generalized vague Hausdorff space, generalized vague locally compact space.

Keywords: generalized vague topology, generalized vague structure space, generalized vague compactness, vague Haudorff space.

1.Introduction

The theory of fuzzy topological spaces was introduced and developed by Chang[3]. Since then various notions in classical topology have been extended to fuzzy topological spaces by fuzzy topologies like Azad [1], Zadeh [11], Tomasz Kubiak [7, 8], Tuna Hatice Yalvac[9], Brown [2], Goguen [5]. Gau[4] et al. propose the notion of Vague sets (VSs), which allow using interval-based membership instead of using point-based membership as in fuzzy sets. The interval-based membership generalization in VSs is more expressive in capturing vagueness of data. In this paper we introduce the concept generalized vague structure space . Some interesting properties of the concepts introduced are also studied.

2.Preliminaries

Definition 2.1:[4]

A Vague set A in the universe of discourse S is a Pair (t_A, f_A) where $t_A : S \to [0,1]$ and $f_A : S \to [0,1]$ are mappings (called truth membership function and false membership function

respectively) where $t_A(x)$ is a lower bound of the grade of membership of x derived from the evidence for x and $f_A(x)$ is a lower bound on the negation of x derived from the evidence against x and $0 \leq t_A(x) \leq 1- f_A(x) \leq 1$ $\forall x \in S$. The set of all vague sets on X is denoted by VS(X).

Definition 2.3: [4]

A Vague set A of S is said to be contained in another Vague set B of S. That is $A \subseteq B$, if and only if $V_A(x) \leq V_B(x)$. That is $t_A(x) \leq t_B(x)$ and $1 - f_A(x) \leq 1 - f_B(x)$ $\forall x \in S$.

Definition 2.4: [4]

Two Vague sets A and B of S are equal (i.e) A = B, if and only if $A \subseteq B$ and $B \subseteq A$. (i.e) $V_A(x) \leq V_B(x)$ and $V_B(x) \leq V_A(x)$ $\forall x \in S$, which implies $t_A(x) = t_B(x)$ and $1 - f_A(x) = 1 - f_B(x)$.

Definition 2.5 :[4]

The Union of two vague sets A and B of S with respective truth membership and false membership functions t_A, f_A and t_B, f_B is a Vague set C of S, written as $C = A \cup B$, whose truth membership and false membership functions are related to those of A and B by $t_C = \max\{t_A, t_B\}$ and $1 - f_C = \max\{1 - f_A, 1 - f_B\} = 1-\min\{f_A, f_B\}$.

Definition 2.6: [4]

The Intersection of two vague sets A and B of S with respective truth membership and false membership functions t_A, f_A and t_B, f_B is a Vague set C of S, written as $C = A \cap B$, whose truth membership and false membership functions are related to those of A and B by $t_C = \min\{t_A, t_B\}$ and $1 - f_C = \min\{1 - f_A, 1 - f_B\} = 1-\max\{f_A, f_B\}$

Definition 2.7: [4]

Let A be a Vague set of the niverse S with truth membership function t_A and false membership function f_A, for $\alpha, \beta \in [0,1]$ with $\alpha \leq \beta$, the (α, β) cut or Vague cut of the Vague set A is a crisp subset $A_{(\alpha,\beta)}$ of S given by $A_{(\alpha,\beta)} = \{x \in S: V_A(x) \geq (\alpha, \beta)\}$, (i.e) $A_{(\alpha,\beta)} = \{x \in S: t_A(x) \geq \alpha$ and $1-f_A(x) \geq \beta\}$

Definition 2.8: [4] The α-cut, A_α of the Vague set A is the (α,α) cut of A and hence it is given by $A_\alpha = \{ x \in S : V_A(x) \geq \alpha\}$.

3.Generalized vague structure space

Definition 3.1:

Let (X, V_τ) be a vague topological space. A vague set A in (X, V_τ) is said to be a generalized vague closed set if vcl(A) $\subseteq$ G whenever A $\subseteq$ G and G is a vague open set. The complement of a generalized vague closed set is called a generalized vague open set.

Definition 3.2:
A family G of generalized vague open sets in a vague topological space (X, V_τ) is said to be generalized vague structure on X if it satisfies the following axioms:
$0_\sim, 1_\sim \in$ G

$A_1 \cap A_2 \in$G, for any $A_1, A_2 \in$G

$\bigcup A_i \in$G, for any arbitrary family of generalized vague open sets $\{A_i : i \in J\} \subseteq$ G.

The pair (X, G) is called a generalized vague structure space. The members of G are called generalized vague open sets. The complement of a generalized vague structure open set is a generalized vague structure closed set.

Definition 3.3:
Let (X, G_1, G_2) be a vague generalized bi-structure space. A vague set A is called generalized vague G_1G_2 open, generalized vague G_1G_2 closed provided A in $G_1 \cup G_2$, $\bar{A}$ in $G_1 \cup G_2$ respectively.

Definition 3.4:
Let (X, G_1, G_2) be a vague generalized bi-structure space. A collection U of vague set in X is called a generalized vague structure semi open (generalized vague structure pairwise pen) if U $\subseteq G_1 \cup G_2$ (U $\subseteq G_1 \cup G_2$ and U contains a non-zero generalized vague structure open set in G_1 and non-zero generalized vague structure open set in G_2). A collection C is called a generalized vague structure semi closed (generalized vague structure pairwise closed) if U = $\{\bar{A} : A \in C\}$ is a generalized vague structure semi open (generalized vague structure pairwise open).

Definition 3.5:

Let (X, G_1, G_2) be a vague generalized bi-structure space. A collection U of vague sets in X is called a vague (α, β) shading if for each x $\in$ X,

there exists a vague set $A = \langle x, [t_A, 1\text{-}f_A] \rangle$ in U with $t_A(x) > \alpha$ and $1\text{-}f_A(x) > \beta$ where $0 \leq \alpha < 1$, $0 \leq \beta < 1$. A subcollection V of U that is also a vague (α, β) shading is called a vague (α, β) sub shading.

Definition 3.6:
Let (X, G_1, G_2) be a vague generalized bi-structure space. A collection U of vague sets in X is called a generalized vague structure semi (α, β) shading (generalized vague structure pairwise (α, β) shading) if for each $x \in X$, there exists a generalized vague structure semi open set $A = \langle x, [t_A, 1\text{-}f_A] \rangle$ in U such that $t_A(x) > \alpha$ and $1\text{-}f_A(x) > \beta$, where $0 \leq \alpha < 1$, $0 \leq \beta < 1$ and U is generalized vague structure semi open (generalized vague structure pairwise open).

Definition 3.7:
Let (X, G_1, G_2) be a vague generalized bi-structure space. A collection C with $C \subseteq G_1 \cup G_2$ is said to be a generalized vague structure semi open cover (generalized vague structure pairwise open cover) if $\bigcup C = 1_{\sim}$ and C is generalized vague semi open (generalized vague structure pairwise open).

Definition 3.8:
A vague generalized bi-structure (X, G_1 , G_2) is said to be a generalized vague structure semi compact space (generalized vague structure pairwise compact space) if every generalized vague structure semi open cover (generalized vague structure pairwise open cover) has a finite subcover.

Remark 3.9:
When we say a vague generalized bi-structure space (X, G_1 , G_2) has a particular property, without referring specially to G_1 or G_2, we shall mean that G_1 and G_2 have the property; for instant (X, G_1 , G_2) is said to be generalized vague structure compact if both (X, G_1) and (X, G_2) are generalized vague structure compact.

Definition 3.10:
Let (X, G_1) and (Y, G_2) be any two generalized vague structure spaces. A map $\psi : (X, G_1) \to (Y, G_2)$ is generalized vague structure continuous if inverse image of every generalized vague structure open set in (Y, G_2) is a generalized vague structure open set in (X, G_1).

Proposition 3.11:
A vague generalized bi structure space (X, G_1 , G_2) is generalized vague structure semi (α, β) compact space if and only if (X, G_1 , G_2) is a generalized vague structure pairwise (α, β) compact space and generalized vague structure (α, β) compact space.
Proof:
Let U be a generalized vague structure pairwise (α, β) shading of X. Then U is a generalized vague structure semi (α, β) shading of (X, G_1 , G_2) and so it has finite generalized vague structure (α, β) sub shading. Conversely, Let U be a generalized vague structure semi (α, β) shading of X. Then either U ⊆ G_1 or U ⊆ G_2 or U is a generalized vague structure paiwise (α, β) shading of X. In either case U has a finite generalized vague structure (α,β) sub shading.
Definition 3.12:
A vague set A = <x, [t_A, 1-f_A]> in a generalized vague structure space (X, G) is said to be a generalized vague structure compact space if for every family U ⊆ G such that $t_A \leq \sup\{t_B$: B = <x, [t_B, 1-f_B]> ∈ U}, 1- $f_A \leq \sup\{1 - f_B$: B = <x, [t_B, 1-f_B]> ∈ U}and for every ε > 0, there exists a finite subfamily $U_\varepsilon \subseteq$ U such that t_A - ε ≤ sup{t_B: B = <x, [t_B, 1-f_B]> ∈ U_ε } , $(1 - f_A)$ - ε ≤ sup{$1 - f_B$: B = <x, [t_B, 1-f_B]> ∈ U_ε }.
Definition 3.13:
A vague set A = <x, [t_A, 1-f_A]> in a vague generalized bistructure space (X, G_1 , G_2) is said to be a generalized vague structure semi (generalized vague structure pairwise) compact space if for every family U of generalized vague structure semi open (generalized vague structure pairwise open) sets, such that $t_A \leq \sup\{t_B$: B =<x, [t_B, 1-f_B]>∈ U},$1 - f_A \leq \sup\{1 - f_B$:B ∈ U} and for every ε > 0, there exist a finite subfamily $U_\varepsilon \subseteq$ U such that t_A - ε ≤ sup{t_B: B∈ U} $(1 - f_A)$ - ε ≤ sup{$1 - f_B$: B ∈ U_ε}.
Proposition 3.14:
Let (X, G_1 , G_2) and (Y, L_1 , L_2) be any two vague generalized bistructure spaces and ψ : (X, G_1 , G_2) → (Y, L_1 , L_2) be a generalized vague structure continuous surjection.
Proof:

1. If (X, G_1 , G_2) is a generalized vague structure pairwise (α, β) compact space, then (Y, L_1 , L_2) is a generalized vague structure pairwise (α, β) compact space.
2. If (X, G_1 , G_2) is a generalized vague structure semi (α, β) compact space , then (Y, L_1 , L_2) is a generalized vague structure semi (α, β) compact space.

Proof:

1. Let U be a generalized vague structure pairwise (α, β) shading of Y. Then ψ^{-1}(U) = { ψ^{-1}(A): A ∈ U} is a generalized vague structure pairwise (α, β) shading of X because if x ∈ X, then ψ(x) ∈ Y, so there exists A = <x, [t_A, 1-f_A]> ∈ U such that t_A (ψ(x)) > α and $1 - f_A$ (ψ(x)) > β. That is, $\psi^{-1}(t_A(x)) > \alpha$ and $\psi^{-1}(1 - f_A(x)) >$ β. Hence { ψ^{-1}(A) : A ∈ U} has a finite generalized vague structure (α, β) subshading { $\psi^{-1}(A_i)$: i = 1,2, …..n}. Now {A_i : i = 1, 2, …..n} is a finite generalized vague structure (α, β) subshading of U because if y ∈Y, then y = f(x) for some x ∈ X thus there exists j such that $\psi^{-1}(t_{A_j})(x) > \alpha$ and $\psi^{-1}(1 - f_{A_j})(x) > \beta$. This implies that $t_{A_j}(\psi(x)) = t_{A_j}(y) > \alpha$ and $1 - f_{A_j}(\psi(x)) = 1 - f_{A_j}(y) > \beta$. Hence (Y, L_1 , L_2) is a generalized vague structure pairwise (α, β) compact space.
2. Similar to the proof of (1).

Proposition 3.15:

Let (X, G_1 , G_2) and (Y, L_1 , L_2) be any two vague generalized vague bistructure spaces and f : (X, G_1 , G_2) → (Y, L_1 , L_2) be a generalized vague structure continuous surjection.

1. If (X, G_1 , G_2) is a generalized vague structure semi compact space, then (Y, L_1 , L_2) is a generalized vague structure semi compact space.
2. If (X, G_1 , G_2) is a generalized vague structure pairwise compact space, then (Y, L_1 , L_2) is a generalized vague structure pairwise compact space.

Proof:

1. Let U be a family of generalized vague structure semi open sets in Y. Then ψ^{-1}(U) = { ψ^{-1}(B) : B = <x, [t_B, 1-f_B]> ∈

U} is a generalized vague structure semi open sets of X because if x ∈ X, then ψ(x) ∈ Y, so there exists A = <x, $[t_A, 1\text{-}f_A]$> ∈ U and let ε > 0 such that $t_A \leq \sup\{t_B : B \in U\}$ and $1 - f_A \leq \sup\{1 - f_B : B \in U\}$. That is, $\psi^{-1}(t_A) \leq \sup\{t_B : B \in U\}$ and $\psi^{-1}(1 - f_A) \leq \sup\{1 - f_B : B \in U\}$. Hence $\psi^{-1}(U) = \{\psi^{-1}(B) : B = <x, [t_B, 1\text{-}f_B]> \in U\}$ has a finite subfamily $\{\psi^{-1}(B_i) : B_i \in U_\varepsilon,\ i = 1,2,3\ldots.n\}$. Now, $\{B_i : i = 1,2,3\ldots.n\}$ is a finite subfamily of $U_\varepsilon \subseteq U$ because if y ∈ Y, then y = ψ(x) for some x ∈ X. Thus there exists j such that $\psi^{-1}(t_A) - \varepsilon \leq \sup\{\psi^{-1}(t_{B_j}) : B_j \in U_\varepsilon,\ j = 1,2,3\ldots.n\}$, $\psi^{-1}(t_A) - \varepsilon \leq \sup\{\psi^{-1}(t_{B_j}) : B_j \in U_\varepsilon,\ j = 1,2,3\ldots.n\}$, $\psi^{-1}[(1 - f_A)] - \varepsilon \leq \sup\{\psi^{-1}(1 - f_{B_j}) : B_j \in U_\varepsilon,\ j = 1,2,3\ldots.n\}$. This implies that $t_A(\psi(x)) - \varepsilon = t_A(y)) - \varepsilon \leq \sup\{t_{B_j} : B_j \in U_\varepsilon,\ j = 1,2,3\ldots.n\}$, $(1 - f_A)(\psi(x)) - \varepsilon = (1 - f_A)(y)) - \varepsilon \leq \sup\{1 - f_{B_j} : B_j \in U_\varepsilon,\ j = 1,2,3\ldots.n\}$. Thus, (Y, L_1 , L_2) is a generalized vague structure semi compact space.

2. Similar to the proof of (1).

Definition 3.16:

A vague generalized bistructure space (X, G_1 , G_2) is a generalized vague structure semi constant (generalized vague structure pairwise constant) compact space provided that each vague constant map from X into I is a generalized vague structure semi compact space (generalized vague structure pairwise compact space).

Proposition 3.17:

Let (X, G_1 , G_2) and (Y, L_1 , L_2) be any two vague generalized bistructure spaces and $\psi : (X, G_1, G_2) \to (Y, L_1, L_2)$ be a generalized vague structure continuous surjection.

1. If (X, G_1 , G_2) is a generalized vague structure pairwise constant compact space, then (Y, L_1 , L_2) is a generalized vague pairwise constant compact space.
2. If (X, G_1 , G_2) is a generalized vague structure semi constant compact space, then (Y, L_1 , L_2) is a generalized vague structure semi constant compact space.

Proof:

1. Let E = $[t_E, 1\text{-}f_E]$ be a vague constant map in Y and let U be a family of generalized vague structure pairwise open sets in Y, such that $t_E \leq \sup\{t_B : B \in U\}$, $1 - f_E \leq \sup\{1 - f_B : B \in U\}$. We have to show that for $\varepsilon > 0$, there exists a finite subfamily $U_\varepsilon \subseteq U$ such that $t_E - \varepsilon \leq \sup\{t_{B_i} : B_i \in U_\varepsilon, i = 1,2,3,\ldots\ldots n\}$, $(1 - f_E) - \varepsilon \leq \sup\{1 - f_{B_i} : B_i \in U_\varepsilon, i = 1,2,3,\ldots\ldots n\}$. Since ψ is a generalized vague structure continuous, $\psi^{-1}(U) = \{\psi^{-1}(B) : B \in U\}$ is a family of generalized vague structure pairwise open sets in X such that $t_E \leq \sup\{\psi^{-1}(t_{B_i}) : B_i \in U_i\}$, $1 - f_E \leq \sup\{\psi^{-1}(1 - f_{B_i}) : B_i \in U_i\}$ because $\psi^{-1}(t_A)(x) = t_A(\psi(x))$. Since (X, G_1 , G_2) is a generalized vague structure pairwise constant compact, there exists a finite subfamily $\{\psi^{-1}(B_i) : B_i \in U_\varepsilon, i = 1,2,3,\ldots..n\}$, such that $t_E - \varepsilon \leq \sup\{\psi^{-1}(t_{B_i}) : B_i \in U_\varepsilon, i = 1,2,3,\ldots..n\}$, $(1 - f_E) - \varepsilon \leq \sup\{\psi^{-1}(1 - f_{B_i}) : B_i \in U_\varepsilon, i = 1,2,3,\ldots..n\}$ which implies $t_E - \varepsilon \leq \sup\{t_{B_i} : B_i \in U_\varepsilon, i = 1,2,3,\ldots..n\}$, $(1 - f_E) - \varepsilon \leq \sup\{1 - f_{B_i} : B_i \in U_\varepsilon, i = 1,2,3,\ldots..n\}$. Hence (Y, L_1 , L_2) is a generalized vague structure pairwise constant compact space.
2. Similar to the proof of (1).

4 . Generalized vague compact open structure space

Definition 4.1:

Let (X, V_τ) be a vague topological space. A vague set A in (X, V_τ) is said to be generalized vague closed if Vcl(A) $\subseteq$ G whenever A $\subseteq$ G and G is vague open. The complement of a generalized vague closed set is a generalized vague open set.

Definition 4.2:

Let (X, V_τ) be a vague topological space and A be a vague set in X. Then vague generalized closure (VGcl for short) and vague generalized vague interior (VGint for short) of A are defined by,

1. VGcl(A) = $\cap$ {G : G is a generalized vague closed set in X and A $\subseteq$ G}
2. VGint(A) = $\cup$ {G : G is a generalized vague open set in X and A $\supseteq$ G}.

Definition 4.2:

Let (X, V_τ) be a vague topological space. If a family $\{G_i : i \in J\}$ of generalized vague open sets in (X, V_τ) satisfies the condition $\bigcup_{i \in J} G_i = 1_\sim$, then it is called a generalized vague open cover of (X, V_τ). A finite subfamily of a generalized vague open cover $\{G_i : i \in J\}$ of (X, V_τ), which is also a generalized vague open cover of (X, V_τ) is called a finite subcover.

Definition 4.3:

A vague topological space (X, V_τ) is called a generalized vague compact space if every generalized vague open cover of (X, V_τ) has a finite subcover.

Definition 4.4:

Let (X, V_τ) be a vague topological space and A be a vague set A in (X, V_τ). If a family $\{G_i : i \in J\}$ of generalized vague open sets in (X, V_τ) satisfies the condition $A \subseteq \bigcup_{i \in J} G_i$, then it is called a generalized vague open cover of A. A finite subfamily of a generalized vague open cover of A, which also covers A is called a finite subcover of A.

Definition 4.5:

A vague set A in a vague topological space (X, V_τ) is said to be a generalized vague compact if every generalized vague open cover of A has a finite subcover.

Definition 4.6:

Let X be a nonempty set. If $r \in I_0$, $s \in I_1$ are fixed real number, such that $r + s \leq 1$ then the vague set $x_{r,s}$ is called a vague point (VP for short) in X given by

$x_{r,s}(x_p) = \begin{cases} [r, 1-s], if\ x = x_p \\ [0,1], \quad if\ x \neq x_p \end{cases}$ for $x_p \in X$ is called the support of $x_{r,s}$, where r denotes the degree of membership value and s is the degree of non-membership value of $x_{r,s}$.

A vague point $x_{r,s}$ is said to belong to a vague set A if $r \leq t_A(x)$ and $1\text{-}s \leq 1 - f_A(x)$

Definition 4.7:

Let (X, V_τ) and (Y, V_σ) be any two vague topological spaces. A mapping ψ : (X, V_τ) $\rightarrow$(Y, V_σ) is generalized vague continuous at a vague point $x_{r,s}$ of X if every generalized vague open set V in Y and $\psi(x_{r,s}) \in V$, there exists a generalized vague open set U in X and $x_{r,s} \in U$ such that $\psi(U) \subseteq V$.

Definition 4.8:
Let (X, V_τ) and (Y, V_σ) be any two vague topological spaces and let ψ : (X, V_τ) $\rightarrow$ (Y, V_σ) be a mapping. Then ψ is said to be generalized vague open if image of each generalized vague open set U in (X, V_τ) is a generalized vague open set ψ(U) in (Y, V_σ).

Definition 4.9:
Let (X, V_τ) and (Y, V_σ) be any two vague topological spaces. A mapping ψ : (X, V_τ) $\rightarrow$(Y, V_σ) is said to be generalized vague homeomorphism if ψ is bijective, generalized vague continuous and generalized vague open.

Definition 4.10:
A vague topological space (X, V_τ) is said to be generalized vague Hausdorff space or T_2 space if for any two distinct vague points $x_{r,s}$ and $x_{u,v}$, there exist generalized vague open sets U and V, such that $x_{r,s} \in$ U, $x_{u,v} \in$ V and U $\cap$ V = $0_\sim$.

Definition 4.11:
A vague topological space (X, V_τ) is said to be generalized vague locally compact space if for every vague point $x_{r,s}$, there exists a generalized vague open set G, such that $x_{r,s} \in$G and G is generalized vague compact. That is each generalized vague open cover of G has a finite subcover.

Remark 4.12:
A generalized vague compact subspace of a generalized vague Hausdorff space is generalized vague closed.

Proposition 4.13:
A generalized vague Hausdoff topological space (X, V_τ), the following conditions are equivalent.

1. (X, V_τ) is generalized vague locally compact.
2. For each vague point $x_{r,s}$, there exist a generalized vague open set G in X such that $x_{r,s} \in$ G and VGcl(G) is generalized vague compact.

Proof:
(i)$\Rightarrow$(ii) By hypothesis for each vague point $x_{r,s}$ in X, there exists a generalized vague open set G, such that $x_{r,s} \in$ G and G is generalized vague compact. Since X is generalized vague Hausdorff space, by Remark 4.13 G is generalized vague closed,

thus G = VGcl(G). Hence, $x_{r,s} \in$ G and VGcl(G) is generalized vague compact.

(ii)⇒(i) Similar to the proof of above.

Proposition 4.14:

Let (X, V_τ) be a generalized vague Hausdorff topological space. Then (X, V_τ) is generalized vague locally compact on a vague point $x_{r,s}$ in X if and only if for every generalized vague open set G containing $x_{r,s}$, there exists a generalized vague open set V, such that $x_{r,s} \in$ V, VGcl(V) is generalized vague compact and VGcl(V) $\subseteq$ G.

Definition 4.15:

Let (X, V_τ) and (Y, V_σ) be any two vague topological spaces. A mapping T : X x Y → Y x X defined by T(x, y) = (y, x) for each (x, y) ∈ X x Y is called a vague switching map.

Definition 4.16:

Let (X, V_τ) and (Y, V_σ) be any two vague topological spaces and let Y^X = {ψ : X → Y such that ψ is generalized vague continuous }. Let M = **{**K : K is generalized vague compact on X**}** and N = { V : V is generalized vague open set in Y}. For any K ∈ M and V ∈ N, let $S_{K,V}$ = {ψ∈ Y^X : ψ(K) ⊆ V }. The collection of all {$S_{K,V}$: K ∈ M, V ∈ N} forms a vague structure on the class Y^X. This structure is called generalized vague compact open structure. The class Y^X with this structure is called a generalized vague compact open structure space.

Definition 4.17:

A mapping e : Y^X x X → Y defined by e (ψ,$x_{r,s}$) = ψ($x_{r,s}$) for each vague point $x_{r,s} \in$ X and ψ ∈ Y^X is called a generalized vague evaluation map.

Proposition 4.18:

Let (X, V_τ) be a generalized vague locally compact Hausdorff space. Then the generalized vague evaluation map e : Y^X x X → Y is generalized vague continuous.

Proposition 4.20:

Let (Z, V_ω) be a generalized vague locally compact Hausdorff space and (X, V_τ), (Y, V_σ) be any two arbitrary vague topological spaces. Then a map ψ : Z x X → Y is generalized vague

continuous if and only if $\widehat{\psi}: X \to Y^Z$ is generalized vague continuous , where $\widehat{\psi}$ is defined by $(\widehat{\psi}(x_{r,s}))(x_{u,v}) = \psi(x_{u,v}, x_{r,s})$.

Proposition 4.21:

Let (X, V_τ) and (Z, V_ω) be any two generalized vague locally compact Hausdorff spaces. Then for any vague topological space (Y, V_σ), the map $E : Y^{ZXX} \to (Y^Z)^X$ defined by $E(\psi) = \widehat{\psi}$ (that is $E(\psi)(x_{r,s})(x_{u,v}) = \psi(x_{u,v}, x_{r,s}) = (\widehat{\psi}(x_{r,s}))(x_{u,v})$) for all $\psi : Z \times X \to Y$ is a generalized vague homeomorphism.

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15. Exercise and Work Performance

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Introduction

People who work out are better workers, more productive and happier. Studies show that workers who engage in regular physical activity perform better at their jobs—both in terms of the quality and quantity of work performed—which is something that can really help a company's bottom line.There are numerous reasons to assume a healthy lifestyle, which includes eating properly and getting in a good amount of exercise each week.

Reviews

According to the American Heart Association, the benefits of physical activity include:

- Improved heart function and lipid profile by lowering total cholesterol while raising HDL, or good cholesterol;
- Lowered blood pressure and resting heart rate;
- Reduced risk and severity of diabetes by increasing insulin sensitivity;
- Improved strength, balance and endurance; and
- Enhanced self-confidence and independence.

Mayo Clinic, the first and largest integrated, not-for-profit group practice in the world, says exercise improves mood, combats chronic diseases, helps to manage weight, boosts energy level and promotes better sleep, among other benefits. A good mood, higher self-confidence and great energy levels? It's no surprise workers with excellent health habits display above-par work performance compared to those who don't exercise.A recent study published in the Journal of Occupational and Environmental Medicine found that workers with poor health habits display subpar work performance more often than other workers.The study surveyed over 10,600 workers in Europe and found that more than 10

percent of sick leave and higher levels of productivity loss at work may likely be due to lifestyle behaviors and obesity.

Actually, it seems that obesity has the most impact on poor performance in the workplace. The study found that obese workers were 66 percent more likely to call in sick for 10 to 24 days than normal-weight workers, as well as 55 percent more likely to take more than 25 sick days.The study concluded that weight appeared to play a very vital role in whether an employee had a fundamental health issue that might cause sick leave. And considering the fact that there are more than 190 million overweight or obese Americans, that's a lot of productivity loss at companies, not to mention a large number of sick days that could be avoided.

Moreover, it's been reported that businesses experience billions of dollars in productivity losses each year from absence due to illness caused by obesity.Here are some of the key findings of the study in the Journal of Occupational & Environmental Medicine:83 percent of obese workers report they've developed at least one disease, compared to 75 percent of overweight workers and 69 percent of normalweight workers.Concerning productivity, 44 percent of workers surveyed said they felt they performed less than optimally in the day before taking the survey. Almost four percent of those with impaired productivity were found to eat less than half of the recommended amount of fruits and vegetables.

Another study published in the Journal of Occupational and Environmental Medicine about seven years ago reported many of the same findings. The study was led by Nicolaas P. Pronk, PhD, with the Center for Health Promotion at Health-Partners in Minneapolis.The study found that when employees get more physical activity, work performance gets a boost. Physically fit workers are likely physically stronger and have greater endurance, and are less likely to feel fatigued, Pronk found. Researchers in the study surveyed nearly 700 workers in a variety of occupations and asked them a number of questions regarding number of workdays lost, the quality and quantity of work, interpersonal relationships with coworkers, and how they rated their overall work performance and their perceived level of exertion while at work.

The researchers found "significant associations" between these areas and lifestyle factors. Specifically, the study found that:

- Moderate physical activity was related to both quality of work performed and overall job performance.
- Workers who engaged in moderate and vigorous physical activity were more likely to rate job performance higher.
- Cardiorespiratory fitness made workers more efficient in completing a greater quantity of work.
- Obese workers had more difficulty getting along with coworkers—they also had more absentee days.
-

According to other research, presented at a past American College of Sports Medicine (ACSM) annual meeting, workers' quality of work, mental performance and time management were better on days when they exercised. The research findings stemmed from a study involving 210 workers in England, most of whom had sedentary jobs, whose employers had onsite exercise programs. According to an ACSM press release, participants completed questionnaires reflecting the ease of completing tasks using a seven-point scale. This was done on a day when they exercised during the workday and again on days when they did not exercise at all.

After exercising, study participants returned to work more tolerant of themselves and more forgiving of their coworkers. Their work performance was constantly and considerably higher, as measured by: (1) their ability to manage time demands, (2) their ability to manage output demands and (3) their mental and interpersonal performance. According to the study, the gains were prevalent among the study participants, with a minimum of 65 percent of workers improving in all three areas on days they exercised. Being in great physical condition definitely can help a company's bottom line. But, there are a lot of occupations where being in shape is an absolute necessity—because for people in these occupations, their jobs depend on it.

Take police officers and firefighters, for example. When a police officer isn't in good physical health, it can mean the difference between catching a fugitive and the fugitive making a clean getaway. Or for a firefighter, hauling hoses, knocking down doors

and fighting flames not only takes a quick mind, but a healthy body, as well. If a firefighter isn't in shape, it will be very difficult for him to pull a victim out of a burning building and carry that victim down a 50-foot ladder.

Conclusion

Adopting healthy eating habits and exercising regularly not only makes a feeling great and live longer, but as numerous studies show, it can also positively affect work performance and give an edge in a competitive job market. Stay active and independent as even to older adults. Aerobic exercise keeps all muscles strong, which can help to maintain mobility as even for older adults. Aerobic exercise also keeps the mind sharp. At least 30 minutes of aerobic exercise three days a week seems to reduce cognitive decline in older adults.

16. Motivation in Sports

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Abstract

The main aim of this research paper is to know the importance of motivation in sports. In sports motivation plays the vital role in the performance. A motivated person can work and perform happily, healthy and can give better results in sports and competition. Intrinsic motivation refers to behavior that is driven by internal rewards. Extrinsic motivation refers to geared toward earing external reward. motivation can improve by Goal setting, Motivational music, Self- talk.

Keywords - Sports, Motivation

Introduction

Motivation is an internal energy force that determines all aspects of our behaviour; it also impacts on how we think, feel and interact with others.

In sports motivation plays the vital role in the performance of the athletes in getting their best performance and fulfill their potential.

What exactly is Motivation

Motivation is a mental or psychological process that initiates, sustains or guides an athletes behaviour (training, approach to competition, performance)

A motivated person can work and perform happily, healthy and can give better results in sports and competition.

Types of motivation in sports:

There are two types of motivation in sports

1. Intrinsic motivation
2. Extrinsic motivation

Intrinsic motivation refers to behavior that is driven by internal rewards. Intrinsically motivated athletes participate in sports for enjoyment in sport, for reaching and developing new skills, for challenge of competition, for exploration of potential etc.

Intrinsic motivation in others words can be said to be practice while training or practicing for an event to get fresh state of mind to perform better in an event later.

Extrinsic motivation refers to athletic behavior that is geared toward earing external reward or to avoid punishment. These rewards could be money, medal, fame or praise, reward etc. Extrinsically motivated athletes participate for motives such as external rewards (trophies, media attention, scholarships etc) or to avoid punishments such as (benched, falling out of favor of coach, defamation etc.)

Extrinsically motivated athletes mainly focus on bringing outcomes of their practices in event to earn rewards.

Motivational Techniques for coaches and Trainers

1. Goal setting: athletes should set goals that he can be achievable and should be determined and motivated to achieve those goals. Those goals could be representing the country or state in some years after participating in some local competition.
2. Motivational music: music is a good mood booster and that can help athlete to get motivated from inside and clear their mind and get fresh before and after the competition. Music can help athlete to enjoy the win as wells as get out of a losing game frustration.
3. Self- talk: as most of the time athlete spends time with themselves and knows his potential he can motivate himself by positive self-talking and push himself to work harder and perform better.

Self confidence

Confidence and motivation are some psychological influences which have an impact in sporting performances and motivation. A highly motivated athlete has a high self-confidence and self-belief that he can perform better and attain good results.

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17. The History of Indian Aesthetics

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Abstract

Aesthetics is a branch of philosophy that deals with the nature of attraction and taste, as well as the philosophy of art. It often examines aesthetic values expressed through taste judgments. The word "Beauty" was coined by the German Philosopher Alexander Baumgartner with a new meaning. Art is the idiom of man's feelings and imagination through a medium. When both are given a form, it is called art. The artist has complete freedom to deny reality, because they are considered the creator of beauty. Aesthetics is a discipline that authors and philosophers seek to explain the concepts of beauty. There are many contradictions between different philosophers and aestheticians. But the authenticity of the beauty is the same. Things that attract you to an artwork. Where you find happiness in an artwork. It is not important that you capture reality. What you think is even more important. E.g. Van Gogh - Sunflower painting. Indian aesthetics originated by inspiring or symbolizing specific spiritual philosophical positions in the Indian art audience. According to Kapila Vatsyayan, "through classical Indian architecture, Indian sculpture, Indian painting, Indian literature (poetry), Indian music and Indian dance" they formed their own rules, but they shared not only the spiritual beliefs of the Indian religious-philosophical mind, but also the symbol and The relations of the spiritual states are detailed policies. Indian beauty precedes Western beauty. There was no real beauty before the Italian philosopher Cross. In India, many scholars are particularly interested in aesthetics. Their main goal is to understand and understand the meaning of beauty. Bharata was the first person to write on aesthetics in Bharata Natya Shastra. Mainly in terms of literature, drama and dance.

Key word: Philosophy, Aesthetics, Spiritual, Religious, Architecture

Introduction

The "concept of beauty" theory. In India, there is a special discipline for the theory of beauty. The Indians were not historically inclined; they did not record anything and always dedicated their works to priests and gods. Bharata Natya Shastra (BNS) - The whole story is told in terms of music and dance and is not written for folk artists. Completely scientific form. Bharat Muni mentions Indra as the lord of heaven with many dancers. According to scholars, choreography was written in the 2nd century BC. Or A.D. So we can say that the play was a long time ago.There is no connection between the Indus Valley Civilization and the Mauryan period, i.e. the BNS must have been written during the Shunga dynasty and this form must have been known in Harappa but did not end due to lack of evidence. The first theory of music, dance and drama was BNS but these forms were much earlier. Bharata looking for true beauty uses the word rasa (essence of life, juice, amrita), which is the source of all life. We live on fluid (water) and it is considered the source of all life. This theory is very popular, but since it is difficult to identify, there are opponents and protagonists to identify them.

In the 7th century, Bhama and Dandin rejected the Rasa doctrine, saying that beauty in drama was ironic. In the 9th century, Anand Vardhan (Kashmiri Pandit) supported Bharata Rasa Siddhanta and Natya Shastra. In his book Sound World, he researched and explained theory in terms of sound.10th century Abhinav Gupta (Kashmiri Pandit family). He authored a book, Abhinav Bharati, which explained the theory of sound and writing through principles and commentaries (e.g. Kali Das). In Abhinav Bharati, he selected some important verses from these (epic poems) and later discussed them in his book Rhetorical Parts by Category. Through his analysis, he proved that the most important element in poetry is Rasa. The great poets who wrote the great poems - Kalidas, Valmiki, Shudra, Bhavabhuti, etc. are some of them. The format of this literature is in the form of plays and plays. Restoration theory of the mammoth-sound of the 11th century. He is also a follower of Rasa theory. His contribution was that he did not take verses from previous verses; he also considered the work of his contemporaries. Rudrat tried to dispose of the Rasa theory and said

that it was not necessary for art. Rudrat & Dandin tried to prove their own stuff like Riti (style). Manahoran Ghosh uses the word "sentiment" in his BNS translation, while other authors use the word "pleasure" for Rasa. The aesthetic experience has been described as “tasteless”. Scholars refer to the taste as "amorous" in other words, and the artwork containing the juice is often described as "rasavant" or "rasavat". Bharata talk about the 8 concepts of RASA (the 9th concept, which was later widely added by the authors): -

- Romantic - love, attractiveness. The presiding deity: Vishnu. Color: green.
- Comedy - Laughter, birth, humor. The presiding deity: Ganesha. Color: White.
- Rudra -anger. The presiding deity: Rudra. Color: red.
- Karuna - Compassion, tragedy. Superior Goddess: Yama. Color: Pigeon color.
- Bibhatsa - disgust, aversion. The presiding deity: Shiva. Color: blue
- Bhayanak -Horror, Terror. The presiding deity: Kala. Color: Black
- Veera -heroic mood. Superior Goddess: Indra. Color: Brownish brown
- Fantastic -Wonder, surprise. The presiding deity: Brahma. Color: Yellow
- Śhanta - Peace or serenity. Goddess: Vishnu. Color: White

The Navarasas or Nine Rasas depicted in a Kerala style mural

The 9th Rasa was later added by the authors. It serves as an equal member of the Rasa set, but at the same time is distinctly different from the aesthetic pleasure. It has been suggested that it is so good but not equal to the self-realization bliss experienced by yogis.

Rasa is born out of the union of " Vibhav" "Anubhava" and "Vyabhichari bhavas".

1. **Vibhav** (decisions / causes): Indication of physical conditions, time and other means for aesthetic reproduction.
2. **Alambana Vibhav** - Substantial Decision - It is difficult to imagine romantic feelings without a romantic or romantic rasa suspension lover and hero or heroine, hero or heroine.
3. **Uddipina Vibhav**- exciting decision - the moon, sandalwood extract, jewelry, perfume, clothing and jewelry or a secluded place in the garden.
4. **Anubhav** - specify unconventional means of producing emotions like gestures, holding hands, kissing, etc..
5. **Sanchari and Vyabhichari bhavas** - Emotional status (Bharta mentioned 33 of them) There range from agitation, depression, tiredness, shame, joy, etc. One that is not loyal even in the saddest of the place there is humor He uses an example of a recipe. e.g. sugar in Kerala is used in their food.

Finally, there are listed 8 involuntary bodily responses they are called **Sattvika** - physical expression, Bhava, Perspiration ,Paralysis ,Fainting, Trembling ,Change of Voice, Change of Color

1. RITI THEORY- Acharya Vamana - (bhama and dandin) - Poetry Kavya
2. ALANKAR THEORY - Bhamah
3. DHVANI THEORY - Anand Vardhan

Elements of Art- Five Schools of Indian Aesthetics

1. Alankarwad - bhamah
2. Ritisiddhant - Vaman
3. Dhwani Siddhant - Anand Vardhan
4. Vakrokti - Kuntak
5. Auchitya Vada - Khemindra

The Rasa Siddhanta (theory of aesthetic experience) of Bharata (5^{th} century) is based on the four kinds of abhinaya (acting/expression).

- Angika abhinaya (voluntary non-verbal expression) to depict emotions/feelings of a character being played by the actor.
- Vacika abhinaya (verbal expression) to express emotions/feelings, tone, diction, the pitch of a particular character.
- Aharya abhinaya (costume and stage expression) to enhance expression.
- Sattvika abhinaya (involuntary non-verbal expression) expressed by the presence of tears, a mark of horrification, change of facial colour, trembling of lips, enhancing of nostrils) to express the deepest emotions of a character.

Thus the main theme discussed in choreography is the melodic and creative use of language — both verbal and non-verbal-that makes expression the supreme poem. Bharata keeps the melodic and creative use of language.

The Alaṁkra Siddhanta (theory of figures) of Bhamah (6^{th} century) defines kavya togetherness of sound and meaning. According to Bhamah, Alaṁkara (poetic figure) is the essential element of poetry and it consists in the striking manner of putting a striking idea in an equally striking word.

According to Anandavardhana in the world of sound, "the generation minister of poetic attraction, depending on the words, the word and the meaning of the words (poetic figures)" also confirms the creative use of language in literature.

The poet uses Alaṁkaras (figures) with a view to

Increasing the beauty, enhancing the qualities, depicting the nature, heightening the feelings, delineating the action or activities, circumstances, exposing the internal state, delineating the character, describing the physical beauty, exhibiting the objective. Depicting the scene, characterizing the spontaneous movements, and putting thoughts in tune with feelings.

Alamkara (figure) is used to

Underline an integral part of a literal meaning; to nourish the literal meaning to its climax; to beautify the expression and give a

different meaning to achieve excellence by its own splendor; and to express some impossible meaning.

The alaṁkāras have been further classified by Rudrata in the following way:

- śabdārthālaṁkāras (figures based on sounds or verbal figures and meaning).
- sadraśyamulakālaṁkāras (figures based on similarity),
- virodhagarbhālaṁkāras (figures based on the difference),
- nyāyamulakālaṁkāras (figures based on logic),
- śraṁkhalāmulakālaṁakāras (figures based on the chain),
- gudarthapratitimulakalamakaras (figures based on inference or hidden meaning),
- vargīkaraṇ- bahirgatālaṁakaras (admixture of figures),
- ubhayālaṁakāra (hybrid figures).

The rīti siddhānta (theory of style) of Vaman (8th century) theory (style theory) is also based on three types of styles of creative use of language. In short, stone (style) is mainly based on how the meaning of poetry (poetry) is presented in accordance with rasa (feeling).

Riti and Guna: 3 types of riti 1. Viadarbhi 2. Gaudi 3. Panchala

The dhvani siddhānta (theory of suggestion) Anandavardhana (9th century) - The meaning of a word or sentence is understood by using its final symbol. E.g. Oops! - Stress on the "h" is different when you are happy and when you are sad.

Dhwani The sound was originally written for poetry, but over time, it was also used for its symbolic meaning in art. In art, the voice of Sphotvad (explosion of words). The voice also has a meaning. Tonal variations i.e. tint and shades can give or change the meaning of the subject.

(Rasa Dhwani) You get some joy or sadness when you hear anything. Mahima Bhatta states that the consonant is always hidden. When we research Abhidh (primary meaning) in depth, we get the meaning of consonant (tertiary or indicated meaning).

The denotative function (abidhâ), the indicative function (laksnâ) and the suggestive function (vyanjanâ)

"The Logic of Emotion". Here, I point out that the Anand sound is linked to Torasa and can refer to emotions as meaning (in fact, emotions are only suggestive and cannot communicate directly, psychological traits and therefore not visible).

It was taken further by Abhinava, who further developed it in terms of the juice-sound concept. Significance of this theory to all art forms The visual arts (including the theatrical and gesture arts such as dance) also communicate through references and can convey both meanings and emotions.

The vakrokti siddhānta(theory of oblique expression) of Kuntaka (11th century)

According to Bhamaha, all poetic discourses revolve around expression or cursive every day as opposed to the direct expression of language. These theorists seem to be engaged with the problem of distinguishing poetic language from ordinary language. In the lame hand, the word expands on import.

The aucitya siddhānta(theory of propriety) propounded by Ācārya Kshemendra (11th century) Aucitya or appropriateness requires such a brief mention. The husband recognizes it in the context of the show (say, acting out of context, the social status of the hero, etc.). Ananda also discussed about it and Kuntaka. But it attracts central attention in the hands of Xemendra who highlights the fit between the sources, subject and context etc. Again, here is a concept that can be expanded without major changes to different art forms. Simply put, there has to be a fit between theme and form and it is also present in all areas of aesthetics.

Dosas and Gunas

In literary theory dosas (flaws to be avoided) and gunas (qualities of good writing) figure since the time of Bharata. Later aestheticians also discuss them. What is significant here is that dosas and gunas are relative to contexts and different ages and are rephrased differently by different theorists. While primarily discussed in the context of literature, they stand on solid foundations for applicability of all art forms. A work of art, in order to be successful, must avoid certain defects and display

certain positive qualities. This applies to fine arts as well as to the other art forms.

Shastra:

- Natya Shastra
- Sangeet Shastra
- Saundarya Shastra
- Mahakavi - great poets who wrote mahakavya
- Kalidasa,valmiki,shudraetc.
  Abhivan gupta wrote abhinav bharti - shloks - rhetorical parts - rasa
- Vamana's Kavyalankara Sutra
- Rudrata - tried to dispose of - proposed ornaments riti (style)
- Bhavas
- Vaibhav
- Alambana
- Uddipina
- 2nd century BC. Bharat Muni - Aim of beauty is Rasa - Natya Shastra
- 7th-century Bhama gave a new theory of Alankarwad.
- Sangeet Shastra -
- Saundarya Shastra -
- Natya Shastra – Bharatmuni

Anand Vardhan - theory of sound. (Dhvanyaloka)

10th-century Dhananjay - theory of Vritti

11th-century Kuntak - theory of Vakrokti

11th-century Mammat - Re-established theory of Dhwani

13th-century Jayadev - Gave importance to Dhwani (Ornamentation)

14th-century Vishvanath - Considered Rasa as another form

16th-century Pandit Raj Jagannath - again supported the theory of Dhwani

Significance of Classical Theory of Aesthetics

The alaṁkāra siddhānta (theory of figures) of Bhamah (6th century) defines kāvya togetherness of sound and meaning. According to Bhamah, alaṁakāra (poetic figure) is the essential element of poetry and it consists in the striking manner of putting a striking idea in an equally striking word.

Anandavardhana view in Dhvanyāloka that "alaṁkārās (poetic figures) are those elements which, depending upon word and meaning, minister to the generation of poetic charm" also certifies the creative use of language in literature.

Ornamentation of Poem or Text

Alamkāra (figure) is used to underline an integral part of a literal meaning; to nourish the literal meaning to its climax; to beautify the expression and give a different meaning to achieve excellence by its own splendor; and to express some impossible meaning.

The alaṁkāras have been further classified by Rudrata in the following way:

- śabdārthālaṁkāras (figures based on sounds or verbal figures and meaning),
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- gudarthapratitimulakalamakaras (figures based on inference or hidden meaning),
- vargīkaraṇ- bahirgatālaṁakaras (admixture of figures),
- ubhayālaṁakāra (hybrid figures).

Conclusion:

Indian Aesthetics can provide roots for Indian scholars and help them grow. Its insights lead them to further exploration and discovery. And once they are firmly rooted, they are in a position to respond and communicate authentically and effectively to other streams of thought. Only at this stage does cross-fertilization occur, resulting in the parental tradition being enriched and developed. Even for Western scholars, Indian aesthetics are equally relevant. It helps to broaden the perspective of those who are almost conditioned by the Western tradition. It is a well-known fact that many Western creative writers have benefited from their acquaintance with Indian philosophy and culture. It has also been established that the father of modem linguistics, Ferdinand de Saussure, benefited greatly from his study of Indian grammatical thought. There is every reason to believe that interaction with Indian aesthetics is less beneficial. Its ideas and concepts (i.e., Juice, Sound, Curvature, Generalization, Sympathy) enrich the

tradition of Western criticism. It is truly unfortunate that Western literary scholars and critics have not made a deliberate attempt to explore and exploit the ins and outs of Indian beauty. Even TS Elliott, who is thought to have been influenced by Rasa Theory 6, did not make a clear reference to Indian literary theories. Although Susanne K. Langer (Feeling and Form) mentions the concept of writing; her treatment was also nothing but casual. Widespread indifference to Western literary scholars or aestheticians may be due to two reasons:

There is every reason to believe that an interaction with Indian aesthetics will prove no less beneficial. Its ideas and concepts (i.e., Rasa, Dhvani. Vakrohti. Sadharanikarana, Sahrdaya) are bound to enrich the western critical tradition. It is really unfortunate that western literary scholars and critics have so far made no deliberate attempt to explore and exploit the insights of Indian aesthetics. Even T. S. Eliot, who is believed to have been influenced by the rasa doctriue6, makes no explicit reference to Indian literary theories. And though Susanne K. Langer (Feeling and Form) mentions the concept of rasa;, her treatment is also nothing but casual. This pervading indifference to the western literary scholars or aestheticians is most probably due to two reasons: they suffer either from some deep-rooted prejudice or from some misconception. May be they think that there is nothing worthwhile in Indian aesthetics or that it belongs to the domain of orient lists. But both the positions are untenable. A tradition, however remote in time and place, never becomes old or meaningless; it .contains in itself the seeds of regeneration and recovery. It is always relevant to the present simply because the present is the child of the past. There may or may not be any immediate gain from the study of Indian aesthetics, but it is not as important as its far-reaching effect. It is no less a means of self-discovery than a stimulus to critical thought. This art of expression, imagination and use of adorned and embellished language according Subject matter makes William Shakespeare exceptional. While talking on the rasa theory, Prof. Ami Upadhay uses good example from the Meghdoot where Kalidas's Yaksha sends a message to his beloved through the cloud, he says: cloud, you will see river Narmada, Spread out at the foot of the Vindhya Mountain, Rough and full of rocky hill,

Looking the decoration on the Elephant body, Made by scattered marks of painted strokes.

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18. A Brief History and Tourist Places of Mysuru District

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About Mysuru History

The word '*Mysuru*' is a corrupted version of '*Mysooru*', which is derived from the word '*Mahishur*' or '*Mahishasurana Ooru*', which means '*the town of Mahishasura*' in Kannada, the local language. Mysuru has been associated with the Puranic story found in the Devi Bhagavatha. According to the story in the Devi Purana, Mysuru was ruled by the demon King Mahishasura who was a buffalo-headed monster. In response to the prayer by the Gods and Goddesses to save them from the demon, Goddess Parvathi, took birth as Chamundeshwari and killed the monster on top of the Chamundi hill near Mysuru. Hence, the hill and the city have the names Chamundi Hill and Mysuru respectively.

Fig-1: Mahishasura

There is a caption in Mysuru by the Hoysalas that dates back to the 11th and 12th century. The Mysuru was ruled by Gangas, Chalukyas, Cholas and Hoysalas. After the Hoysalas

came, the Vijayanagar Kings and then the Mysuru Yadu dynasty came to power in 1399A.D. They were the feudatories of the Vijayanagar Kings. This dynasty also contributed to temple building in Mysuru. Bettada Chamaraja Wadiyar, the raja of Mysuru rebuilt the fort of Mysuru and made his headquarters and called the city '*Mahishura Nagara*' meaning the city of Mahishur. Many captions done in the 17th century and later refer to Mysuru as '*Mahishuru*'.

During the rule of Krishnaraja Wadiyar III the town of Mysuru expanded and moved beyond the walls of the fort. Krishnaraja Wadiyar IV developed Mysuru into a beautiful city with excellent planning. Under his rule Mysuru became famous for its wide roads, magnificent building and elegant parks. Today Mysuru is a modern city that has managed to retain its quaint old world charm. Today Mysuru in famous in the world for its sandalwood and rosewood artifacts, stone sculptures, incense sticks, inlay work with ivory and its exquisite silk sarees.

Folk Art of Mysuru

Karnataka has a rich tradition of folk arts and folklore. Different branches of folk art like singing, drama, dance and puppet shows are popular in the rural parts of Karnataka. On different festivals and especially during Dasara these artistes visit the city of Mysuru and perform. In the olden days they performed before the King, today they perform on the streets of Mysuru or in specially designated areas during Dasara. Presentation of Folk Art by popular folk groups of the state has become an established and regular part of the Dasara celebrations.

a) ***Pooja Kunitha***

In Puja Kunitha dance, the emphasis is more on the visual presentation than the oral narration. Here the spectacular exhibition of colourful bamboo structure is ably matched by the skilful body movements.

Fig- 2: Pooja Kunitha

b) ***Dollu Kunitha***

This is a group dance named after the Dollu used in its performance, and performed by the men of the Kuruba community. The group consists of 16 dancers, each wearing a drum and playing different rhythms while dancing. The beat is directed by a leader with cymbals in the center. Slow and fast rhythms alternate, and the group weaves a varied pattern. Costumes are simple; the upper part of the body is usually left bare, while a black sheet is tied on the lower body over the dhoti.

c) ***Beesu Kamsale and kamsale Nritya***

This is a group dance performed by village men in the Mysuru, Nanjanagudu, Kollegala and Bangalore regions. It is named after the kamsale, which is played and as a prop by the dancers. The kamsale is a cymbal in one hand and a bronze disc in the other, producing a rhythmic clang. The kamsale nritya is connected to a tradition of worship of Male Mahadeshwara (Shiva) by the Kuruba community, from which most of the dancers are drawn. The dance is performed to rhythmic, melodious music sung in praise of Shiva. It is part of a diiksha (oath), and is taught by a spiritual leader.

d) *Somana Kunita*

Somana Kunita (the Mask Dance) is a celebratory form of guardian spirit worship popular in southern Karnataka, performed primarily in village shrines dedicated to the Mother Goddess by the Gangemata community. The dance is characterized by elaborate masks (somas) painted in a variety of colours, with each mask's colour indicating the god's nature. A benevolent deity is represented by a red mask, while a yellow or black mask suggests the opposite. There are many types of masks, differing from region to region.

Somana Kunitha is a ritualistic dance associated with worship of the Grama Devate (village deity), and is primarily celebrated after Ugadi and before the onset of the monsoon at Maha Shivaratri. It is most popular in the old Mysuru region

Mysuru Weather

Mysuru is located in the southern part of the Deccan Plateau. The district of Mysuru is an undulating table land that is partly covered by granite outcrops and fringed with lush green forests. The city is at 770m above sea level and 140kms from Bengaluru, the state capital. Mysuru has an area of 6,307 Sq.Kms and a population of 30,01,127 (2011 census). The city is also known as the City of Palaces, Mysuru has always delighted its visitors with its quaint charm.

Mysuru has a warm and cool climate throughout the year. It has a salubrious climate. The climate of Mysuru is moderate. The weather in winter is cool and the summers are bearable. The minimum temperature in winter is around 15^0C and in summer the maximum temperature is around 35^0C. Mysuru gets most of its rains during the monsoon between June to September. Mysuru average rainfall annually is around 86 centimeters.

Culture of Mysuru

Mysuru has been a city where all religions have co-existed in harmony for many centuries. Even when Mysuru was culturally at its eminence under the Vijayanagar Empire and the Wadiyars the rulers always encouraged all religions and cultures without any discrimination. The continuous auspice and support of the Kings in every field led to the evolution of a distinct style known as the

"Mysuru Style" in all the fields like painting, architecture, music, poetry etc. Over a period of time as this culture spread far and wide it was prefixed with the word "Mysuru" to identify the unique cultural heritage.

Though Mysuru has become a modern city it has not lost touch with its tradition and culture. The ultimate expression of cultural unity is witnessed during the 10 daylong Dasara festivities that is synonymous with Mysuru. The celebration not only includes religious ceremonies but also the decoration of houses, display of dolls, distribution of sweets to neighbours and children. The residents of Mysuru have celebrated Dasara in this manner for decades.

Modern Mysuru

Mysuru as a modern city has managed to retain its quaint old world charm and is one of the tourism hot spots and receives maximum number of tourist during the period of Dasara festival from all over the world. Mysuru is famous in the world for its sandalwood and rosewood artifacts, stone sculptures, incense sticks, inlay work with ivory and its exquisite silk sarees.

Mysuru emerged to be one of the major IT hubs in Karnataka. Mysuru is second in state for software exports. The robust growth of the IT sector in the city is attributed because of major contributions from Infosys, Larsen Toubro (L&T), Wipro Technologies, Software Paradigms India etc. There are around 50 IT Companies in Mysuru. Karnataka Industrial Areas Development Board (KIADB) has established five industrial areas in and around Mysuru, these are located at Belagola, Belavadi, Hebbal (Electronic City), Metagally and Hootagalli. Major industries like Bharat Earth Movers Limited, Kirloskar, Vikrant Tyres, Jay Bearings, Automotive Axel AT&S, Nestle, Reid and Taylor, TVS Company, Bannari Amma Sugar Factory, South India Paper Mills, ABB. Technology/software technology training centre like Infosys, Wipro, L&T, SPI etc. have established their presence in Mysuru. Good living conditions and availability of skilled manpower is another major factor that attracts investors to establish them in the city.

Mysuru Junction is the City's main station and there are trains plying the route between Bangalore, Chennai, Mumbai, New

Delhi, Thanjavur, Ajmer, Hyderabad, Shirdi etc. Railway Line electrification between Mysuru and Krantiveera Sangolli Rayannna Station will be built on international standards. High-speed train between Mysuru and Chennai is also approved.

The road networks of Mysuru city are in a gridiron fashion with numerous parallel roads "grids" the city. And then there are some 5 radial roads, all originating from Mysuru Palace, which is the focal point of the city. Mysuru has a very good road network, Bengaluru city is connected by SH-17 with 4 lane road. National Highway 212 and State Highways 17,33,88 pass through Mysuru connecting it to nearby by cities. Mysuru has Outer Ring Road of 42.5Kms. all these highways intersect the Outer Ring Road.

Mandakalli Airport is situated around 10kms from Mysuru City. Nearest international airport is Kempegowda International Airport, Bengaluru around 170kms from Mysuru.

There are 2 Medical colleges, 14 Engineering colleges, 12 Polytechnic Colleges, 1 Nature Cure and Yoga college, 2 Ayurveda College and 36 Degree Colleges in Mysuru District.

MYSURU TOURIST PLACES

1. **Jaganmohan Palace**

Jaganmohan palace was built in 1861 by Mummadi Krishnaraja Wodeyar, in the traditional Hindu architectural style. The most striking feature of this palace is the intricate carvings that adorn the entire structure. Visitors will be mesmerized with creative excellence at the entrance of the palace itself. A beautiful masterpiece, the main door of the palace has exquisitely carvings on its both sides. The carvings are of Dashavatara, about the ten incarnations of Lord Vishnu.

Fig-3: Jaganmohan Palace

Its entablatures display exquisite carvings of religious significance such as miniature temples and motifs related to Hindu religion. On the other hands, the breathtaking carvings on the walls of Jaganmohan Palace display royal history, lineage of the Mysuru royal family along with murals on the Mysuru Dusshera.

3. Railway Museum

Fig-4: Railway Museum

The Railway Museum at Mysuru is an outdoor exhibit of vintage locomotives. It was setup in 1979 by Indian Railways and is the second such museum after the National Railway Museum in

Delhi. The museum is situated opposite the Central Food Technology and Research Institute on Krishnaraja Sagar road. In addition to the locomotives it has a gallery of photographs and paintings depicting the growth of railways in India. Railway signals and lights are also displayed. The museum also has a battery-operated mini-train for children which make a small ride in the grounds of the museum.

3. **Chamundi Hill**

Chamundeswari temple is situated on the top of Chamundi hill which is about 3,489ft. above the sea level and located at a distance of 13Kms. from Mysuru. The temple is dedicated to Sri Chamundeswari, the titular deity of the Mysuru Royal Family also described as '*Mahishasura Mardini*' for having killed the buffalo headed demon Mahishasura.

Krishnaraja Wodeyar III built a Gopura with gold finials, and set up statues of his and his three queens. In 1827, Krishnaraja Wodeyar III made arrangements for festivals and processions and gifted Simhavahana in 1843.

There are two other temples dedicated to Narayana Swamy and Mahabaleswara. Sri Mahabaleswara temple was built before the beginning of the Hoysala rule. Epigraphical evidences indicate this area as Mabhala or Mabbala theertha and states that Hoysala. King Vishnuvardhana has given donations to this temple in 1128A.D.

Nandi

The huge Nandi is one of the largest in India, 16ft. tall at the front and 25ft. in length. The magnificent pendent bell around its neck are exquisite Doddadevaraja was responsible for the creation of this colossal bull.

4. **Srikanteshwara (Nanjundeswara) Temple**

Nanjanagudu is situated on the right bank of the river Kapila or Kabini, one of the tributaries of the Cauvery River. Nanjanagudu, also known as Garalapuri, is famous because of the huge Nanjundeswara temple. The name Nanjunda is explained as Shiva who had taken Halahala or poison and it is this Nanjunda who became Vishakanta or Shrikanta by digesting it. Thus, the divinity is called Nanjundeswara and Srikanteshwara. He is also described as one who cures diseases of his devotees.

The Muslim ruler Hyder Ali Khan had strong faith in God Nanjunda and called him as 'Hakim Nanjunda' as his beloved elephant's eye ailment was cured by administering the holy water (theertha) from the temple. This place is called the Dakskina Kashi or Varanasi of the South. Both Hyder Ali and Tippu Sultan had close associations with this temple.

According to the Mythology, Sage Gauthama installed a Linga, the idol form of Shiva. Nearby the town is the Sangam, where the Kapila and the Gundlu rivers join, there is a spot is called "Parashurama Kshetra" where Parashurama is said to have had himself expiated for the sin of beheading his mother in a stream called Churnavati joining Gundlu or Kaundinya River. Parashurama temple, shrines of Maruthi and a newly built Basaveshvara temple are some important places to visit.

The huge Nanjundeswara temple was built by the Gangas in the 19th century. The temple has many minor shrines like the Narayana with consorts, Chandikeswara, Parvathi, Natya Ganapathi and others. There are many more lingas, mantapa, vahanas (carriages) Uthsava Murthis (idols used during procession) here.

The nine-storied tall Gopura or tower is ascribed to the queen of the Mysuru kings, Devarajammanni, wife of Krishnaraja Wodeyar III (1849). The 120ft tower boasts of stucco images, decorations, 7 gold kalashas, each 3 meters tall exhibiting the Dravidian architecture.

Another important centre in Nanjanagudu is the Raghavendra Math, situated on the road to the right of the Nanjundeswara temple. It was founded by the close of 15th century and great gurus or heads like Sudheendra Thirtha and Raghavendra Thirtha headed this institution. It has a fine collection of Sanskrit manuscripts and copper plates.

A popular variety of banana locally known as 'Nanjanagudu Rasabaley' has also made Nanjanagudu famous all over the region.

5. **Mysuru Palace**

The Palace of Mysuru (also known as the Amba Vilas Palace) is a historical palace in the city of Mysuru in Karnataka. Designed by the English Architect, Henry Irwin, the Mysuru Palace dominates the skyline of Mysuru. A three storied structure

in the Indo-Saracenic style built between 1897-1912, the palace has beautifully designed square towers at cardinal points, covered with domes. The Durbar Hall with its ornate ceiling and sculpted pillars and the Kalyanamantapa (marriage pavilion) with its glazed tiled flooring and stained glass, domed ceiling are worth noting. Intricately carved doors, the golden howdah (elephant seat), paintings as well as the fabulous, jewel encrusted golden throne (displayed during Dasara) are amongst the palace's other treasures. The walled palace complex houses the Residential Museum, temples and shrines including the Shwetha Varahaswamy temple. The palace is illuminated on Sundays, Public Holidays as well as during the Dasara Celebrations where 97,000 electric bulbs are used to illuminate it.

Fig-5: Mysuru Palace

The Palace has four entrances. Main entrance is called "Jaya Maarthaanda" to the east, "Jayarama" to the North, "Balarama" to the South and "Varaha" to the west.

6. **Mysuru Zoo (Sri Chamarajendra Zoological Garden)**

Mysuru Zoo (Sri Chamarajendra Zoological Garden) was started in 1892 by Chamaraja Wodeyar X, then the King of Mysuru. Initially as a private Zoo and was named as Khas-Bangale. It was also called as Thamasha Bangale. The zoo which has now spread over an area of 250 acres was initially meant for the exclusive visit of the royal family but public entry started as early as 1920.

8. St. Philomena's Church

Fig-6: St. Philomena's Church

Built in 1804 in typical Gothic style, with a main hall or mane with the statue of St. Philomena, and richly crafted exterior, it is one of the grandest churches of the Country. The structure has twin spires 175ft. in height, stained glass windows, Corinthian columns and plastered niches, which are highly ornamental.

8. **Talakadu**

The Kaveri River makes a sharp bend and on the left banks at this turn is Talakad, also known as Talakadu. It is 45Kms from Mysuru and 185Kms. from Bangalore in Karnataka, India. Talakad historic site and of archaeological importance. It's not only a spiritual pilgrimage center but is a scenic beauty with vast spreads of sand.

The illustrious and powerful Western Gangas ruled from 350 to 1050AD until they were overthrown by the Cholas in the 11th century. Talakad came under the Hoysala Empire in the 12th century. The Hoysala ruler built the impressive Vijayanarayana Chennakesava Temple at Belur. Subsequently, after the Hoysalas, the powerful Vijayanagara Kingdom rulers and the Maharajas of Mysuru ruled the place.

Fig7: Keerthinarayana Temple

The temples were submerged in sand. Among the temples of Talakad, the five Lingams believed to represent the five faces of Shiva form the Pancha Pathi are famous. They are Pathaleshwara, Maruleshwara, Arkeshwara, Vaidyanatheeshwara and Mallikarjuna temples. As a tribute to these five Shiva temples, a festival is held once every 12 years called Panchalinga Darshana, last held in 2006.

The Panchalinga Darshana is held on a new moon day in the month of Karthika when two stars conjoin, the stars of Khuha Yoga and Vishaka. On this day, tradition has it that pilgrims should first bathe in the Gokarna theertham, worship Gokarneswara and Chandikadevi, and then worship Vaidyeshwara, Arkeshwara, Pataleshwara, Maraleshwara and Mallikarjuna finally worship Kirtinarayana and conclude the pilgrimage in one day.

9. **Kabini or Kapila River**

The Kabani, also called Kabini or Kapila, is a river in southern India. It originates in the Wayanad District of Kerala state by the confluence of the Panamaram River and the Mananthavady River. It flows eastward to join the Kaveri River at Tirumakudalu Narasipura in Karnataka. The Kaveri River then irrigates Tamil Nadu and it is major drinking water source before emptying into the Bay of Bengal near Kaveripoompattinam.

Fig-8: Kabini River

Close to the town of Sargur it forms the huge Kabani Reservoir. The backwaters of the Kabani reservoir are very rich in wildlife especially in summer when the water level recedes to form rich grassy meadows. The Kabani dam is 2,284ft. in length with an original gross storage of 19.52tmcft, but that has been reduced considerably due to silt accumulation. The Kabani Dam is situated between villages Bichanahalli and Bidarahalli.

10. **Karanji Lake**

Karanji Lake is a lake located in the city of Mysuru in the state of Karnataka, India. The lake is surrounded by a nature park consisting of a butterfly park and a walk-through aviary. This aviary is the biggest *'Walk-through Aviary'* in India. There is also a museum, the Regional Museum of Natural History which is located on the banks of this lake. The total area of Karanji Lake is 90 hectares. While water spread area is about 55hectares, the foreshore area measures about 35hectares. Karanji Lake is owned by the Mysuru Zoo Authority. Mysuru Zoo gets revenue of an average of Rs. 50000 per day from ticket sales to enthusiasts who visit this lake.

The Kar Barouanji Lake was one of the favourite haunts of migratory birds like herons and egrets. But the lake started getting polluted when sewage from the nearby residential areas were let into the lake. This pollution led to the destruction of aquatic life in the lake and with the food-source getting depleted, the migratory birds started to avoid the lake.

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19. Students Perceptions towards Online Learning

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ABSTRACT:

The breaking out of Corona virus in last year has put our lives into a complete shutdown. This shut down has changed the entire education system. Many educational institutes including schools, colleges and universities are found to transformed from offline to online mode of learning to stop academic loss. In the midst of COVID-19 pandemic, to assess the student teachers' e-readiness and perception towards online learning and the customising themselves towards the online learning was a great challenge both to the teachers and to the students. Online survey was conducted on 500 students of different colleges through scheduled questionnaire. The parameters for the students perceptions towards online learning are compatibility , internet connectivity and satisfaction , the findings are the respondents 40% are adaptable and 20% are not compatible.

Keywords: Students, online, compatible

I.INTRODUCTION

With the fast development of the Internet, many colleges and universities have offered online courses as a viable alternative to traditional face-to-face instruction. However, considerable concerns and problems have developed, particularly as it relates to the quality of online education. Online education, according to Harasim (1989), is a new domain of learning that combines distance education with the practice of face-to-face instruction utilizing computer-mediated communication

The term online education is often associated with Internet education, virtual education, cyber-learning, and asynchronous

learning (Office of Sustainable Development, 2000). online education is characterized by: · the separation of teachers and learners, the influence of an educational organization , ·the use of a computer network to present or distribute some educational content · the provision of two-way communication via a computer network so that students may benefit from communication with each other, teachers, and staff. (p.1) Online courses and degrees have been widely adopted by higher education institutions as another method to substitute traditional classroom instruction. Allen and Seaman's (2003) recent survey on online education delivered by higher education institutions in the United States, found that at least 80% of the course content delivered by those institutions were delivered online. Regardless of the definition, an early indication of the widespread popularity of 862 online education courses can be found in a survey conducted by the U.S. Department of Education, which revealed that more than 54,000 online education courses were being offered in 1998, with over 1.6 million student's enrolled (cited in Lewis, et al., 1999). In a more recent study, Allen and Seaman (2003) reported that: (a) over 1.6 million students took at least one online course during the Fall of 2002, (b) over one-third of these students (578,000) took all of their courses online, (c) among all U.S. higher education students in Fall 2002, 11 percent took at least one online course, and (d) among those students at institutions where online courses were offered, 13 percent took at least one online course (p.1).

With the recent rapid development in educational technology, online learning has become another way to provide education to learners . However, in spite of an increase in the number of online courses, the retention rate of learners in online learning is often below that of learners in traditional full-time courses compared the course completion rate between students enrolled in online courses and students enrolled in traditional courses.

II. OBJECTIVES OF THE STUDY

The following are the objectives of the study

i. To study the conceptual framework of online learning
ii. To know the perceptions of students towards online learning

III. RESEARCH METHODOLOGY

The study is based on both primary and secondary data. A self designed standardized questionnaire as the major tool for collecting primary data . For secondary data the sources are journals, Magazines, internet and other relevant manuals/publications , newspapers articles, authenticated websites and other published sources. For valid and reliable results, a purposive sampling method was used for students response with a sample size of 500. Data collected from the respondents has been coded and tabulated using MS Excel and findings has been drawn. Simple percentages are done.

IV. REVIEW OF LITERATURE

Yi Yang (2004) this paper focus on students' perceptions toward the quality of online education. It utilises the qualitative method to investigate the students experience have negative because of delayed feedback from instructors, unavailable technical support from instructors, lack of self-regulation and self-motivation.

Horzum et al(2015) it studies the online readiness, academic motivations and perceived learning via structure equation modelling , the result was academic motivation is effective in increasing perceived learning in online learning and increasing readiness is an effective way to increase academic motivation.

Kaushal Kumar Bhagat et al (2019) paper focus on the five personality traits of the students towards the online learning. It provides evidence that the students with different personality traits have different preferences for and experiences in online course.

Dr. Ramakanta Mohalik, Ms. Sonali Suparna Sahoo (2020) it studies the student teacher readiness to online mode during pandemic, it also given the problems and challenges that are faced by the students. It concludes with highlighting the support from government, parents, institutions and teachers required to make online learning more accessible and effective for student teachers.

V. CONCEPTUAL FRAMEWORK OF ONLINE LEARNING

There were many online learning studies were done but yet the students studying in the Hyderabad were not studied during the pandemic and post pandemic situation.). In a more recent study, Allen and Seaman (2003) reported that: (a) over 1.6 million students took at least one online course during the Fall of 2002, (b) over one-third of these students (578,000) took all of their courses online, (c) among all U.S. higher education students in Fall 2002,

11 percent took at least one online course, and (d) among those students at institutions where online courses were offered, 13 percent took at least one online course (p.1).

VI. STUDENTS PERCEPTIONS TOWARDS ONLINE LEARNING

To know the perceptions of the students towards online learning during the post pandemic situation , though there are number of parameters and factors available but still taken only three parameters are availability of internet connection, customisation to online mode, and the satisfaction. The perceptions of the students are explained through the following table.

Table 1.1

Table showing different perceptions of the students

		Frequency	**Percent**
Internet connectivity	NO internet	200	40
	Minimum internet	200	40
	Max. internet	100	20
	Total	**500**	**100.0**
Customisation to online mode	Ready	100	20
	Not interested	300	60
	No response	100	20
	Total	**500**	**100.0**

Source: Primary data

The table 1.1, it illustrates the distribution of the different perceptions on two parameters are internet connectivity and customisation to online mode by the respondent. It can be observed that the students who are having internet connectivity are only 20% and the respondents not having internet connectivity are 40% whereas the students with minimum internet connectivity are 40% both are equal. The customisation to the online mode indicates that the students use to online mode and the readiness from offline to online mode was a very big challenge to them as it indicates that the students who were not interested in the online classes were 60%, it shows that the majority of the students are use to the online mode.

Table 1.2

Table showing different perceptions of the students (Satisfaction)

		Frequency	Percent
Satisfaction	Feasibility to attend national and international classes	200	40
	No restrictions – fun learning	200	40
	Ambiguity	100	20
	Total	**500**	**100.0**

Source: Primary data

From the above table 1.2 it can be retrieved that the respondents perception of satisfaction of feasibility to attend national and international classes is 40%, the students perceive that they are blessed to have online mode which enabling them to attend national and international classes which may not be possible through offline classes, and 40% of respondents feel of fun learning through phones, tablets, laptops and personal computers earlier they were restricted to use but now they are allowed to use and attend the classes, 20% of respondents are in still ambiguity of using the online mode of classes.

VI. CONCLUSIONS

Through this study it is found that the pandemic situation has transformed from offline mode education to online mode of education in a very short span of time , without pandemic it would have taken a decade to transform from offline to online mode of education. I conclude that the pandemic situation has positive impact on education mode and the students perceptions towards online mode of education has changed and they are ease to use and adopt the changing situation.

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20. Hypotheses in Research Methodology

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Introduction :

A hypothesis is an assumption, an idea that is proposed for the sake of argument so that it can be tested to see if it might be true. A hypothesis is usually tentative, it's an assumption or suggestion made strictly for the objective of being tested. A hypothesis is a logical prediction of certain occurrences without the support of empirical confirmation or evidence. In scientific terms, it is a tentative theory or testable statement about the relationship between two or more variables i.e. independent and dependent variable. A good hypothesis posits an expected relationship between variables and clearly states a relationship between variables. A hypothesis should be brief and to the point.

A hypothesis is a proposed explanation for a phenomenon. Hypothesis is an idea that is suggested as the possible explanation for something but has not yet been found to be true or correct. A hypothesis is a statement that can be proved or disproved. It is typically used in quantitative research and predicts the relationship between variables. A hypothesis is a specific, testable prediction. It describes in concrete terms what you expect will happen in a certain circumstance. A hypothesis is used to determine the relationship between two variables. In research, a hypothesis is usually created at the start of the study and is a prediction that can be tested using experiments. A hypothesis is commonly known as a guess based on former knowledge, or an educated guess. Scientists use the scientific method to study phenomenon they observe. After observing a phenomenon a scientist will do research and then form hypothesis to test.

Examples of Hypotheses-

Some examples of hypotheses are-

1) Students who eat breakfast will perform better on a Math exam than students who do not eat breakfast.
2) Students who experience test anxiety prior to an English exam will get higher scores than students who do not experience test anxiety.
3) If you increase the duration of light, then corn plants will grow more each day.
4) Students who receives counseling will show a greater increase in adjustment than students not receiving counseling.

Meaning of Hypothesis :

A hypothesis is an explanation for a set of observations. Hypothesis is a word which is derived from two Greek roots, 'Hypo' and 'thesis'.

'Hypo' means,

- tentative or subject to the verification
- composition of two or more variables which is to be verified.

'Thesis' means,

- statement about solution of a problem
- position of these variables in a specific frame of reference.

A hypothesis is a tentative statement about the solution of the problem. Hypothesis offers a solution of the problem that is to be verified empirically and based on some rationale. Hypothesis is considered as an intelligent guess or prediction, that gives directional to the researcher to answer the research question. The hypothesis must include three components,

1) The variables
2) The population and
3) The relationship between the variables.

Definitions of Hypotheses :

Some important definitions of hypotheses are as follows –

1) "Hypothesis is a possible explanation of the phenomenon under observation." – **C.T. Kurein**
2) "A hypothesis is a tentative generalization the validity of which remains to be tested. In its most elementary stages the hypothesis may be any hunch, guess, imaginative idea or

intuition whatsoever which becomes the basis of action or investigation." – **Lundberg**

3) "A proposition which can be put to a test to determine validity and is useful for further research."
– Goode and Hatt
4) "A hypothesis is a proposition to be tested."
– E.S. Bogardus
5) "A hypothesis is a conjectural or unproven statement of the relation between two or more variables." **– Kerlinger**
6) "A hypothesis is a formal statement that presents the expected relationship between an independent and dependent variable." **– Creswell**
7) "On the basis of cursory knowledge of his facts he (Scientists) attempts to single out by trial and error methods, the significant factors which would throw light on the problems at hand. He tries to establish casual relations between various sets of facts by shrewd guess or profound hunch. This penetrating hunch, this provisional central vital idea which becomes the basis for bruitful investigation is known as a working hypothesis."**– P.V. Young**
8) "Hypothesis is a proposition not known to be definitely true or false, examined for the sake of determining the consequences which would follow from its truth."
– Max Black
9) "A hypothesis is a tentative assumption made in order to draw out and test its logical or empirical consequences. Test here means either to prove it wrong or to confirm it."
– Webster
10) "A hypothesis is a statement capable of being tested and thereby verified or rejected." **– Rummel and Balline**
11) "A tentative statement about something, the validity of which is usually known."
– Black, James A. and Dean, J. Champion
12) " Hypothesis is proposition that is stated in a testable form and that predicts a particular relationship between two or more variable. **–Baily, Kenneth D.**
13) "A hypothesis is written in such a way that it can be proven or disproven by valid and reliable data."
– Grinnell, Richard

In short, a hypothesis is a intelligent guess, a supposition, inference, hunch provisional statement or tentative generalization as to the existence of some fact, condition or relationship relative to some phenomenon which serves to explain already known facts in a given area of research and to guide the search for new truth on the basis of empirical evidence.

Purpose of Hypothesis :

The purposes of hypothesis is discussed below.

1) Hypothesis gives direction to study or investigation.
2) Hypothesis defines facts that are relevant and not relevant.
3) Hypothesis suggest which form of research design is likely to be the most appropriate.
4) Hypothesis provides a framework for organizing the conclusions of the findings.
5) Hypothesis limits the research to specific area.
6) Hypothesis offers explanations for the relationships between those variables that can be empirically tested.
7) Hypothesis furnishes proof that the researcher has sufficient background knowledge to enable her / him to make suggestions in order to extent existing knowledge.
8) Hypothesis structures the next phase in the investigation and therefore furnishes continuity to the examination of the problem.
9) Through hypothesis theoretical propositions is supported, scientific knowledge is gained.
10) Hypothesis dictate the type of statistical analysis to be used with the data.

Characteristics of Hypothesis :

A good hypothesis must possess the following characteristics.

1) A hypothesis must be conceptually clear. All the concepts used in a hypothesis must be clearly defined.
2) A hypothesis must be empirically testable. Concepts which do not have empirical basis must not be included in a hypothesis.
3) A hypothesis should be consistent with known facts.

4) A hypothesis must be specific and precise. The possible relationship among the variables must be precisely stated in hypothesis.
5) A hypothesis must have a theoretical orientation. A good hypothesis must be able to support or deny an existing theory of social relations.
6) A hypothesis must be clear, definite and stated in a simple manner.
7) A hypothesis must have reasonable explanation to any problem in the present state of knowledge.
8) A hypothesis must be an adequate answer to the problem.
9) A hypothesis should be related to a body of theory.
10) A hypothesis should be related to available techniques.

Sources of Hypothesis :

The main sources of hypothesis are-

1) Experience of researcher
2) Review of literature
3) Findings of the pilot study
4) Interaction with knowledgeable persons of the concerned field
5) Knowledge of culture and society
6) Creative thinking and imagination of researcher
7) Continuity of research

Functions of Hypothesis :

A hypothesis contains several concepts which are logically connected or arrange. The interrelationships among the concepts give a clear answer to the problem under study.

Following are the functions of hypothesis.

1) Hypothesis helps in making an observation and experiments possible.
2) Hypothesis helps in verifying the observations.
3) It helps in directing the inquiries in the right directions.
4) Hypothesis can explain all the facts connected with it.
5) Hypothesis prevents us from blind search.
6) Hypothesis helps us to search only for relevant facts. So it is helping us to save money and time.
7) Hypothesis can place clear and specific goals before the researcher.

8) Hypothesis acts as guide to collect the relevant data related to the problem.
9) Hypothesis is a temporary solution of a problem concerning with some truth which enables an investigator to start his research works.
10) Hypothesis offers a basis in establishing the specifies what to study for and may provide possible solutions to the problem.
11) Hypothesis may lead to formulate another hypothesis.
12) A preliminary hypothesis may take the shape of final hypothesis.
13) Hypothesis can estimate population characteristics.
14) Hypothesis can correlate variables.
15) Hypothesis can display differences among two or more populations.
16) Hypothesis can show possible cause and effect.
17) Hypothesis explain the social phenomenon.

Types of Hypothesis :

There are various types of hypotheses-

1) Simple Hypothesis –

A Simple hypothesis also known as basic or composite hypothesis. In simple hypothesis all parameters of the distribution are specified. It predicts relationship between to variables i.e. the independent variable or cause and the dependent variable or effect.

Examples –

1) Smoking leads to cancer.
2) Consumption of sugary drinks every day leads to obesity.
3) The higher ratio of unemployment leads to crimes.
4) Hard work leads to more achievement.

2) Complex Hypothesis –

A complex hypothesis is also called as Multivariate hypothesis because complex hypothesis is that one in which there are multiple dependent as well as independent variables. A complex hypothesis examines relationship between two or more independent variables and two or more dependent variables.

Examples –

1) Smoking and other drugs leads to cancer, tension, chest infections etc.

2) The higher ratio of unemployment, poverty, illiteracy leads to crimes like dacoit etc.

3) Eating more vegetables and fruits leads to weight loss, glowing skin and reduce the risk of many diseases such as heart disease, high blood pressure and some cancers.

4) Satisfaction is higher among patients who are older and dwelling in rural area, than those who are younger and dwelling in urban area.

5) Global warming causes icebergs to melt which in turn causes major changes in weather patterns.

3) **Directional Hypothesis -**

Directional hypothesis are those where one can predict the direction i.e. effect of one variable on the other as 'Positive' or 'Negative'. In other words, directional hypothesis predicts the direction of the relationship between the independent and dependent variable.

Examples –

1) Girls perform better than boys. Here 'better than' shows the direction predicted.

2) Children aged 4 years eating proper food over a 5 years period are having higher IQ levels than children not having a proper meal. This shows the effect and direction of effect.

3) High quality of nursing education will lead to high quality of nursing practice skills.

4) Non-Directional Hypothesis –

A hypothesis that, one experimental group will differ from another without specification of the expected direction of the difference.

Example –

College students will perform differently from elementary school students on a memory task without predicting which group of students will perform better.

5) Associative Hypothesis –

Associative hypothesis predicts an associative relationship between the independent variable and the dependent variable. When there is a change in any one of the variable, changes also occurs in the other variable.

It reflects a relationship between variables that occurs or exists in natural settings without manipulation. This hypothesis is used in correlational research studies.

Examples –

1) Communication skills of health care providers and cost of care related to the satisfaction of patients.
2) The lower the blood sugar level, the lesser is the risk of infection among diabetic patients.
3) Maternal age is associated with pregnancy complications.

6) Causal Hypothesis –

Causal hypothesis predicts a 'cause' and 'effect' relationship or interaction between two more independent variables and dependent variables. This hypothesis predicts the effect of the independent variable on the dependent variable. Causal hypotheses examine how a manipulation affects future events.

Example –

Prevalence of pin site infection is lower in patients who receive pin site care with hydrogen peroxide as compared to patients who receive the pin site care with betadine solution.

7) Descriptive Hypothesis –

This is a hypothesis which describes the cause and effect relationship of a phenomenon.

Example –

Group study helps to achieve high marks in examinations.

8) Statistical Hypothesis –

A hypothesis which can be verified statistically called statistical hypothesis. A statistical hypothesis is a hypothesis concerning the parameters or from of the probability distribution for a designated population or populations, or more generally, of a probabilistic mechanism which is supposed to generate the observations.

A statistical hypothesis is an assumption about a population parameter. This assumption may or may not be true. Researcher might conduct a statistical experiment to test the validity of this hypothesis.

A statistical hypothesis is an examination of a portion of a population or statistical model. In this type of analysis, you use statistical information from an area. The statement could be logical

or illogical but if statistic verifies it, it will become a statistical hypothesis.

Example –

Vitamin 'C' is good for skin. You would have to test this hypothesis on a group of people to verify it. This is statistical method of verifying the statement.

Types of Statistical Hypotheses –

There are basically two types of statistical hypotheses.

A) Null Hypothesis –

Null hypothesis is also known as statistical hypothesis because it is used for statistical testing and interpretation of statistical outcomes. A null hypothesis is a hypothesis that says there is no statistical significance between the two variables in the hypothesis. This hypothesis is used when the researcher believes there is no relationship between independent and dependent variables. In case of null hypothesis, researcher tries to invalidate or reject the hypothesis.

It is an assumption that specifies a possible truth to an even where there is absence of an effect. Null hypothesis is a statement that signifies no change, no effect and no any differences between variables. If null hypothesis is true, any discrepancy between observed data and the hypothesis is only due to chance. It provides the statement which is contrary to the hypothesis. It's a negative statement and the symbol is denoted by 'Ho' or 'Hn'.

$$Ho : \mu = 0$$

Examples –

1) There is no relationship between smoking and the incidence of coronary artery diseases.
2) All lilies have the same number of petals.
3) There is no significant difference in mental health of male and female secondary school teachers.
4) There is no association between use of oral contraceptive and blood cancer.
5) Water does not affect the growth of a plant.

Types of Null Hypothesis –

There are two types of Null Hypotheses.

1) Simple Null Hypothesis –

In hypothesis testing, typically a single, simple, null hypothesis is tested against difference in all directions.

Example –

Bed rest will not relives severe asthmatic dyspnea. In this example, the independent variable that is, bed rest does not have any causal relationship with the dependent variable that is, severe asthmatic dyspnea.

2) Complex Null Hypothesis –

The examples of complex null hypothesis are as follows -

Examples –

1) Smoking, drug abuse, alcoholism, tobacco use etc. have no relationship in the occurrence of malaria, mumps or chicken pox.
2) Nasogastric tube feeding does not alter body temperature.

B) Alternative Hypothesis –

Alternative hypothesis is also known as a maintained hypothesis or research hypothesis. An alternative hypothesis is a claim that is contradictory to the null hypothesis. In an attempt to disprove a null hypothesis, researchers will seek to discover an alternative hypothesis. It is denoted by 'H_1'.

The alternative hypothesis is a statement of what a statistical hypothesis test is set to establish. Firstly many hypotheses are proposed. Then among them, one is selected which is the most efficient.

Types of Alternative Hypothesis –

There are 4 main types of alternative hypothesis.

1) Point Alternative Hypothesis –

Population distribution in the hypothesis test is fully defined and has no unknown parameters.

2) Non-Directional Alternative Hypothesis –

It states that the null hypothesis is untrue.

3) One-Tailed Directional Hypothesis –

It is only concerned with the region of rejection for one tail of a sampling distribution.

4) Two-Tailed Directional Hypothesis –

It is concerned with both-regions of rejection of the sampling distribution.

Examples –

1) A person's health improves during the times when they drink green tea only, as opposed to root beer only.
2) Work habits improve during the times when one gets 8 hours of sleep only, as opposed to 9 hours of sleep only.
3) The growth of the plant improved during the times when it received Vitamin-rich water only, as opposed to distilled water only.
4) Cacti experience more successful growth rates than tulips on Mars.
5) Beings from Mars would not be able to breathe the air in the atmosphere of the Earth.
6) Creatures found in the bottom of the Ocean use aerobic respiration rather than anaerobic respiration.
7) In a clinical trial of a new drug, the alternative hypothesis might be that the new drug has a different effect, on average compared to that of the current drug.

We would write :

H_1: The two drugs have different effects, on average.

9) Logical Hypothesis –

A logical hypothesis is a proposed explanation possessing limited evidence. As the name suggests, it is verified logically. The process of verification involves-

- Agreement
- Disagreement
- Difference of opinion

Generally, you want to turn a logical hypothesis into empirical hypothesis, putting your theories or postulations to the test.

Example –

Hypothesis statement : An animal cannot survive without water.

Logical verification : This is true because all living beings need water.

10) Empirical Hypothesis –

Empirical hypothesis is also called a working hypothesis. It is an only an assumption during the formulation phase, but when it is tested it is no longer just an idea or notion. It is actually going through trial and error and perhaps changing around those independent variables.

Empirical which means it is based on evidence. In scientific method, the word 'empirical' refers to the use of working hypothesis that can be tested using observation and experiment. Empirical data is produced by experiment and observation.

Examples –

1) Cotton clothes are better for summer than velvet clothes.
2) Roses watered with liquid Vitamin B grow faster than Roses watered with liquid Vitamin E .
3) Women taking Vitamin E grow hair faster than those taking Vitamin K.
4) Thirsty rats find their way through a maze quicker if there is water at the end of the maze.

In these examples, trial and error is leading to a series of findings, The results of these experiments can all be observed and proven over time.

11) Working Hypothesis –

A working hypothesis is constructed as a statement of expectations, which can be linked to the exploratory research purpose in empirical investigation. A working hypothesis is a hypothesis that is provisionally accepted as a basis for further research. Working hypotheses are often used as a conceptual framework in qualitative research. The provisional nature of working hypotheses makes them useful as an organizing device in applied research. Here they act like a useful guide to address problems that are still in a formative phase.

The working hypothesis is provisionally adopted to explain the relationship between some observed facts for guiding a researcher in the investigation of a problem.

Examples –

1) Population influences the number of bank branches in a town.
2) Number of students influences the number of schools in city.

12) Rational Hypothesis –

These are the propositions that describe a relationship between two variables. The relationship could be non-directional or directional, positive or negative, causal or simply correlational. While stating the relationship between the two variables, if the terms of positive, negative, more than, or less

than are used then such hypotheses are directional because the direction of the relationship between the positive or negative variables has been indicated.

Examples –

1) Level of job commitment of the officers is positively associated with their level of efficiency.
2) The higher the level of job commitment of the officers, the lower their level of absenteeism.

13) Scientific Hypothesis –

A scientific hypothesis is the initial building block in the scientific method. Scientific hypothesis is an idea or proposition that can be tested by observations or experiments, about the natural world. The two primary features of a scientific hypothesis are falsifiability and testability, which are reflected in an " If … then" statement summarizing the idea and in the ability to be supported or refuted through observation and experimentation.

Examples –

1) If garlic repels fleas, then a dog that is given garlic every day will not get fleas.
2) If sugar causes cavities, then people who eat a lot of candy may be more prone to cavities.
3) Bacterial growth may be affected by moisture levels in the air.

14) Research Hypothesis –

It states the existence of relationship between two or more variables. A research hypothesis is a statement of expectation or prediction that will be tested by research. A research hypothesis is a specific, clear and testable proposition or predictive statement about the possible outcome of a scientific research study based on a particular property of a population, such as presumed differences between groups on a particular variable or relationships between variables.

Example –

There is relationship between smoking and incidence of lung cancer.

15) Existential Hypothesis –

Existential hypothesis is one which states the relationship which holds good for at least one place.

Example –

There are at least few corporate workers who are scrounger and may not perform better despite the fact that he is being awarded suitably for better performances.

16) Substantive Hypothesis –

Substantive hypothesis is a hypothesis that represents an expected correlation between two variables. Like any hypothesis, a substantive hypothesis is a conjecture about the relation between two or more variables. It is called 'Substantive' because it has not yet been operationalized and in order to distinguish it from the kind of statistical hypothesis used in hypothesis testing.

A substantive hypothesis requires a null hypothesis test to confirm its validity

17) Ideal Type Hypothesis –

Hypothesis are drawn by seeking ideology of a particular person or event. These type of hypothesis are based on various certain thoughts or ideas. In such type of hypothesis, data is analyzed logically by comprehending its general principles or conclusions. Generally, the concept of ideology puts on the basis of ideology found in religion.

Examples –

1) Collectiveness is found in minority communities.
2) Colonies are thick in the center of urban locations.

18) Qualitative Hypothesis –

These types of hypothesis are drawn from the features of society. Qualitative hypothesis contains number of tribes, economic condition, culture, religion and faith. Theory of economics is drawn from the qualitative hypothesis is that birth ratio is increasingly found in wretched communities.

Examples –

1) African individuals are lazy by birth.
2) The French are interested in enjoyment and pleasures.

19) Uniform Hypothesis –

These type of hypothesis are created for regular actions. The sun rises in the east and sets in the west. Grains productions are taken if it rains sufficient. Industries are established in the urban territories. These things are happened regularly, therefore the hypothesis which drawn from such incidence are called uniform hypothesis. Uniform hypothesis are also found in social sciences.

Examples –

1) The children of illiterate parents can be illiterate.
2) The children who come from economically backward family are less interested in research.

Utility of Hypothesis :

The utility of hypothesis is discussed in following manner.

1) The hypothesis decides the direction of the study. It helps the researcher to decide what type of data is necessary and what information is irrelevant. In the absence of the hypothesis, our research would be direction less.
2) The hypothesis decides the main focus of the study, so that there would not be any deviation from the main path.
3) The well-defined hypothesis gives a temporary answer to the research problem, hence it helps the advancement of knowledge.
4) The clear definition of hypothesis saves time, energy and money. Hence the study becomes a focused study.

Importance of Hypothesis :

Some of the factors responsible for the importance of hypothesis.

1) To the Point Enquiry –

Hypothesis makes a research activity to the point and destination. Research without hypothesis is like a sailor in the sea without compass. So, research is to the point enquiry of problem due to the guidance of hypothesis.

2) Development of Research Techniques –

There are various types of social problems which are complex in nature. For this research is very difficult. We cannot cover it with a single technique but it requires many techniques. These techniques are due to hypothesis provided to a researcher.

3) Separating Relevant From Irrelevant Observation –

A researcher during study will take the observations and facts which are accordance to the condition and situation. While drop out the irrelevant facts from his study. This separation is due to hypothesis formulation which keeps away relevant observation from irrelevant.

4) Selecting Required Facts –

During study a researcher come across many factors but he confined himself to the selection of required facts through

formulation of hypothesis. Hypothesis helps him in selection of relevant facts regarding to the problematic situation.

5) Direction of Research –

Hypothesis acts as a guide master in research. It gives new knowledge and direction to a researcher. It directs a scientist to know about the problematic situation and its causes.

6) Acts as a Guide –

Hypothesis gives new ways and direction to a researcher. It acts as a guide and a leader in various organizations or society. It is like the investigator's eye.

7) Prevents Blind Research –

Hypothesis provides lighting to the darkness of research. It gives difference between scientific and unscientific, false and true research. It prevent blind research and give accuracy.

8) Accuracy and Precision –

Hypothesis provides accuracy and precision to a research activity. Accuracy and precision is the feature of scientific investigation which is possible due to hypothesis.

9) Link between Theory and Investigation –

Theory is a source of hypothesis which leads to its formulation. Hypothesis leads to scientific investigation. So, hypothesis acts as a bridge between theory and investigation.

10) Link between Assumption and Observation –

During formulation hypothesis is in the stage of assumption in the field it transformed into hypothesis in working form. This transformation is due to observation in the field. So, it creates a link between assumption and observation.

11) Provide Answer for a Question –

A hypothesis highlights the causes of a problematic situation. Further solution is also given by a hypothesis which provides answer to a question.

12) Save Time, Money and Energy –

Hypothesis save time, money and energy of a researcher because it is a guide for him and help him in saving these basic things.

13) Proper Data Collection –

Hypothesis provides the basis of proper data collection relevant and correct information collected by a researcher is the main function of a good formulated hypothesis.

14) Proper Conclusion –

A proper formulated hypothesis may lead to a good reasonable, utilized and proper conclusion. If the hypothesis is better than the conclusions drawn by a researcher would be better for solution of a problem.

Epilogue :

A hypothesis is a tentative statement that proposes a possible explanation of some phenomenon or event. Hypothesis helps to translate the research problem and objective into a clear explanation or prediction of the expected results or outcomes of the study. Hypothesis means mere assumptions or supposition which are to be proved or disproved. Hypothesis is a formal question that is intended to resolve. Hypothesis determines the directions of the research. Hypothesis establishes definiteness in the study. Hypothesis is helpful in the limiting subject matter. Hypothesis clears the objects of the research. It is helpful in the collection of useful facts. It is also helpful in the logical conclusions. Hypothesis contributes in formation of theories. It saves labour, time, money and man power. It is also helpful in drawing of particular conclusions.

Hypothesis helps to provide link to the underline theory and specific research question. It helps in data analysis and measure the validity and reliability of the research. It provides a basis or evidence to prove the validity of the research. Hypothesis enables the researcher to investigate objectivity. It indicates the type of research design. It directs the research study process. Hypothesis is used in an experiment to define the relationship between two variables. The first variable is called the independent variable and the outcome is called the dependent variable. There are various types of hypotheses that are useful for various types of research. Hypothesis plays an important role in research because hypothesis is a soul of research. More importantly the conclusions of research depend on the hypothesis.

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21. Impact of Covid 19 on Sports Culture

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Abstract:-

The impact of Corona Virus has affected to worldwide level, all age, gender, and culture are in the danger of COVID-19 pandemics. The countries of entire world has tried to uplift there infrastructure, health and medical facilities to combat this situation. Many of the institutions are in search to find a suitable vaccine to get early cure of it. Many poor countries are facing difficulties to get immunization due to lack of basic infrastructure and economical problems. The industries of all sectors got huge loss in their production and supply chain. Many of workers, regular and temporary employees have been relieved due to instability of revenue. Sports industries and sports fraternity has also suffered a lot due to COVID-19. The Present article has highlighted the impact of COVID-19 on Sports culture systematically.

Introduction:

The World has been gripped by a pandemic over the first half of 2020. It was identified as a new corona virus (severe acute respiratory syndrome corona virus 2, or SARS-CoV-2), and later named as Corona virus Disease-19 or COVID-19 (Qiu et al., 2020). While COVID-19 originated in the city of Wuhan in the Hubei province of China, it has spread rapidly across the world, resulting in a human tragedy and tremendous economic damage. By mid-June, there had been over 8 million cases of COVID-19 globally, with over 436,000 deaths. Given the rapid spread of COVID-19, countries across the World have adopted several public health measures intended to prevent its spread, including social distancing As part of social distancing, businesses, schools, community centers, and nongovernmental organization (NGOs)

have been required to close down, mass gatherings have been prohibited, and lockdown measures have been imposed in many countries, allowing travel only for essential needs.

The COVID-19 epidemic expanded in early December from Wuhan, China's 7th most populous city, throughout China and was then exported to a growing number of countries. The first confirmed case of COVID-19 outside China was diagnosed on 13th January 2020 in Bangkok (Thailand). The spread of COVID-19 is expected to result in a considerable slowdown of all sectors activities. Social, educational, economical all sectors very badly suffer by this COVID-19.Sports events and practicing is the gathering of mass. Sports activities and sports events were heavily suffered by COVID 19. National, international sports events totally closed due to this pandemic. World's mega sporting event Tokyo Olympic 2020 also postponed for one year, this is happened first time in history. Sports training, sports competitions and all related physical activities were stopped due to Pandemic. COVID -19 impact on sports culture. Sports culture not only creates good athletes they create good healthy youth & citizens. Sports activities very badly suffered due to COVID 19. World's all mega sporting events were postponed or cancelled.

The goal is that through social distancing, countries will be able to "flatten the curve", i.e., reduce the number of new cases related to COVID-19 from one day to the next in order to halt exponential growth and hence reduce pressure on medical services. The spread of COVID-19 is expected to result in a considerable slowdown of all sectors activities.

Sports events and practicing is the gathering of mass. Sports activities and sports events were heavily suffered by COVID 19. National, international sports events totally closed due to this pandemic. World's mega sporting event Tokyo Olympic 2020 also postponed for one year, this is happened first time in history. Sports training, sports competitions and all related physical activities were stopped due to COVID 19.

COVID-19:-

The COVID-19 epidemic expanded in early December from Wuhan, China's 7th most populous city, throughout China and was then exported to a growing number of countries. The first confirmed case of COVID-19 outside China was diagnosed on

13th January 2020 in Bangkok (Thailand). On the 2nd of March 2020, 67 territories outside mainland China had reported 8565 confirmed cases of COVID-19 with 132 deaths, as well as significant community transmission occurring in several countries worldwide, including Iran and Italy and it was declared a global pandemic by the WHO on the 11th of March 2020. The number of confirmed cases is constantly increasing worldwide and after Asian and European regions, a steep increase in cases is currently (31 March 2020) being observed in low-income countries. It is problematic to quantify the exact size of this pandemic as it would necessary to count all cases including not only severe and symptomatic cases but also mild ones. Unfortunately, to date, there is not a global and standard response to the pandemic and each country is facing the crisis based on their own possibilities, expertise and hypotheses. Thus, there are different criteria for testing, hospitalization and estimating of cases making it difficult to calculate the number of people affected by epidemic. Based on the data we have so far, the estimated case fatality ratio among medically attended patients is approximately 2%, but, also in this case, a true ratio may not be known for some time.

Sports Culture:-

Sport is an extraordinary complex and a versatile social phenomenon. Therefore, there are different points of view, concerning its nature, specificity, a place in a system of different social phenomena, so there are different definitions of the term "sports". Taking into account all disagreements in the area of definition of the term “sport”, it is necessary to bear in mind that the majority of researchers treat competition as one of the most essential features of sport. Sports culture not only creates good athletes they create good healthy youth & citizens. Sports competition, unlike other kinds of competitive activity, takes place not in usual everyday conditions, but in special, artificially created, conditional situations, which provide equal conditions for contenders, observance of certain rules, including rules-prohibitions, which imply development of other special measures, called to maintain health and dignity of participants of competitions, to provide possibility of unified comparison of sports

activity, objective estimation of qualities and abilities of sportspersons, presence of referees for such estimation.

Impact on Sports Culture:-

Sports activities very badly suffered due to COVID 19. Worlds all mega sporting events were postponed or cancelled. As per UN Economics report "The global value of sports industry is estimated at US$756 billion annually. In the face of COVID -19, many millions of jobs are therefore at risk globally, not only for sports professionals but also for those in related retail and sporting services industries connected with leagues and events, which include travel, tourism, infrastructure, transportation, catering and media broadcasting, among others. Professional athletes are also under pressure to reschedule their training, while trying to stay fit at home, and they risk losing professional sponsors who may not support them as initially agreed.

Impact on Sporting Events:- National Sports federations, Government Sports departments, Privet sports Clubs, Educational Institutes and other various sports, health related clubs organized various levels of sports competitions. These all competitions were either cancelled or postponed by them. Sports competitions improve the physical health as well all over performance of athletes. Sports events totally stopped in the period of COVID 19.

Impact on Sports clubs:- N Number of sports clubs are working to promote sports activities. These sports clubs are doing excellent job to train a good athletes. In the period of COVID 19 all sports clubs were closed. No practice in clubs, so that so many clubs were permanently closed because they were not capable to sustain in COVID 19 period. So many good coaches became a jobless. Very good and result oriented athletes were away from training. Sports club are doing excellent work to produce a good row material of athletes. They trained basic skills to beginners.

Impact on sports Training:- To become a good athlete they need regular training. In the pandemic all type of training sessions were strictly closed. Athletes were became a pressure in non training mode. In this period not only athletes were suffered coaches, support staff and all other related sports staff was suffered. In high performance status of players, gap in practice and training a big setback in physical and mental health.

Conclusion:-

Whole world has been suffered by COVID-19 Pandemic. Impact of this outbreak pandemic is most vulnerable than disease. Effect of this pandemic is on all sectors. Sports culture is also suffered very badly. Sports clubs culture is almost collapse. All athletes are in under pressure. So many sports events cancelled or postponed. Athlete's Training scheduled was totally disturbed and its impact on their performance. Economy of sports clubs was also collapsed. So many coaches & support staff is jobless due to pandemic. Sport event management companies are collapsed.

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22. A Study on Role of Faculty in Quality Enhancement in Higher Education

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Abstract

Education is the manifestation of perfection already in man". The success of every education system depends on the quality of teachers, which in turn depends on the effective teaching and learning process. Teachers' role is of vital significance for the development of society and appropriate changes in the society. Teachers are the most important components of any education system. Teachers play most crucial role in the development of the education system as a whole and also imparting and maintaining the standards of higher education. Quality in education is to learn the right things and to learn them well. Higher education discovered total quality management. one of the most important goals of the state and society is to improve the quality of education.in India very large number of students who can't reach school for primary education and from primary education to secondary education and again secondary education to higher education the dropout rate is very high. The reason for that very less students attracted towards higher education. Reason may be lack of availability of resources, lack of employment, poverty etc. government trying to achieve the required infrastructure for the potential students, it may be in the form of resources, infrastructure qualified facility etc. quality education it is said that quality is not destination, it is a continuous journey.

Introduction

Higher education discovered total quality management in 1980s.The success of every education system depends on the quality of teachers which in turn depends on the effective teaching and learning process. Teachers' role is development and appropriate changes in the society. Teachers are the most important components of education system. Teachers play most crucial role in the development of the Higher education system and maintaining the standards of higher education. one of the most important goals of the state and society is to improve the quality of education.

Role of Teacher

The role of a teacher is to inspire, motivate, encourage and educate learners. Learners can be of any age and from any background. However, for the purposes of this guide, teachers refer to those who educate young people.

Quality of a good teacher

A good teacher is one who can connect with his or her students. He or she should be able to feel the pulse of classroom and adjust or modify his or her teaching style or mode accordingly. A teacher should be both, effective as well efficient when it comes to communicating with his or her students. Lack of communication skills will only end up with students either not understanding the subject matter at all, or understanding it incorrectly. All great teachers are people who teach simply because they love doing so. It isn't about the money, or the prestige, or about earning the respect of their students, or anything else. It is all about the love for teaching. It has always been that way, and it always will. A teacher who, when in doubt, doesn't hesitate to admit his or her lack of expertise on the subject matter and is open to "reverse learning ", i.e., learning a thing or two from the students itself, will no doubt go down well with the students.

Role of Teachers in Quality Enhancement in Higher Education

1. Dedication and Commitment

Dedication and commitment of teachers plays a crucial role in improving the quality of education and shaping the future of nation.

2. Motivation

A teacher should act as a motivational force and should be able to create a learning environment in which students are encouraged to think carefully, rationally and express their thoughts and decide on the situations and difficulties. It is the responsibility of teacher to create a context in which the students' desire and ability to learn can work most effectively. A teacher should act as the role model for the students.

3. Skill Development

Skill development is crucial to the success of students in the job market. Skill development of students, on par with their counterparts elsewhere is an important aspect of enhancement of quality of higher education. With liberalization and globalization of economic activities, the need to develop skilled human resources of a high calibre is imperative. Consequently, the demand for internationally acceptable standards in higher education is evident. Therefore, preparing the students to achieve core competencies, to face the global requirements successfully is very important. This requires that the teachers should be innovative, creative and entrepreneurial in their approach, to ensure skill development amongst the students. By various means such as establishment of collaborations with industries, social organizations, networking with the neighbourhood agencies/bodies and fostering a closer relationship between the “world of skilled work” and the “world of competent-learning”, it is possible to develop required skills.

4. Imparting Value Based Education

It is said that skills are of less importance in the absence of appropriate value systems. Hence, teachers should shoulder the responsibility of inculcating the desirable value systems amongst the students. In a country like India, with cultural pluralities and diversities, it is essential that students imbibe the appropriate values commensurate with social, cultural, economic and environmental realities, at the local, national and universal levels. Whatever be the pluralities and diversities that exist in the country, there is ample scope for inculcating the core universal values like truth and righteousness. The seeds of values sown

in the early stages of education, mostly aimed at cooperation and mutual understanding, have to be reiterated and re-emphasized at the higher educational institutions, through appropriate learning experiences and opportunities.

5. Lateral Thinking

Lateral thinking is solving problems through an indirect and creative approach, using reasoning that is not immediately obvious and involving ideas that may not be obtainable by using only traditional step-up-step logic. Teacher should take initiative to nurture and nourish the students to develop lateral thinking.

6. Use of Resources

Efficient use of resources helps to produce uniquely educated, highly satisfied and employable graduates. Motivated teachers can enrich their teaching with resources and cocurricular activities. Use of ICTs in teaching learning process makes the lecture effective and improves the quality of teaching. Continuous updating of teaching methods and use of innovative teaching methods help to improve the quality of teaching.

7. Curriculum Design

The quality of higher education can be enhanced by designing need based curriculum, keeping in view the demands in the employment sector at national and international level.

8. Special Attention to Research

Promotion of research is crucial for improving the quality of higher education system. It is one of the factors, which influences the quality of teaching. Educational research must be strengthened as an instrument for improving educational quality and results of such research must be communicated to teachers in a better way. The link between classroom teaching and research is extremely important. It must be a link operating in two directions:

- Information to the teachers about latest findings.
- Information to the researchers about the problems.

9. Academic Development

Teachers are the most important components of the higher education system. Academic development of teachers is crucial and necessary for the success of the higher education system because teachers are the prime movers and catalysts for all round development of students. Teachers play a significant role not only in improving the quality of higher education but also maintaining it; the professional competency of teachers has to be of such a high level so as to impart quality knowledge to the students. This would call the continuous upgrading of the professional development of the teachers, which is key guarantee of quality education. High-quality in-service training and professional development within the profession in order to keep in touch with new findings in their subjects and to obtain continuous support for the improvement of their teaching. Teachers need
continuous self-development to generate knowledge that goes to contribute towards
inculcating high professional competency among students. Development of teachers depends on many factors. It is closely linked with

- The quality of research
- Participation in national and international seminars
- Faculty exchange programs
- Upgradation of qualifications
- Exposure to recent developments
- Writing of books and papers
- Collaborating with fellow researchers in other higher education institute

These activities help to impart quality education to students.

10. Quality Awareness and Self Evaluation

Ability to improve the quality of education is the ability to reflect on their own teaching, critically examine the methods used and looking for alternative ways of teaching. To create increased quality awareness and help teachers to improve their teaching methodology and skills may be of crucial importance to improve quality in education. One major way of doing this is to systematically evaluate the own teaching and its results. Evaluation helps to improve their own work. This also helps to discuss about

newer effective methods to use in the teaching and to discuss about the choice of the best teaching methods.

11. Professional Freedom

Professional freedom of the teacher is of crucial importance in developing quality in education. Professional freedom does not mean that the teacher can do whether he likes, but that the teacher, who knows the students, is the person best equipped to decide which methods to use in order to create an optimal leaning situation. There has to be a general thrust in the creativity of the teacher. Authorities can give suggestions to teachers regarding the use of newer teaching methods through service training, professional development programs and other means. But authority should not dictate about method to be used by teacher. The teacher should enjoy academic freedom in the discharge of professional duties. A teacher plays a crucial and demanding role in the process of students learning by creating a
context in which the students' desire and ability to learn can work most effectively. The task of the teacher in the higher education system involves the creation of a learning environment in which students are encouraged to think carefully, rationally and to express their thoughts and to decide on the situations and difficulties they wish to confront and resolve. The teacher helps students to achieve their own aims and adopt notion that underlines the higher education. Therefore, the quality of performance of the teachers is of paramount importance.

12. Professional Ethics

Professional ethics of teachers is an important issue. The complex task of teaching and many other responsibilities shouldered by teachers underline the questions related to the
responsibilities and duties of teachers. This has also been reflected in a growing discussion on
professional ethics among teachers. Promotion of professional ethics also helps to fight against corruption.

Conclusion:

Education without vision is fruitless and education without value is meaningless. The inculcation of values and promotion of values in educational system is a need of the hour to make all the possible attempts to inculcate value – oriented

education in the centres of learning. The teachers' participation with vision to make education meaningful and valuable will contribute to the overall development of the system of higher education of the country as a whole.

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23. The Political Economy Reform in India

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"*The reformer has enemies in all those who profit by the old order, & only lukewarm defenders in all those who would profit by the new."*

-Niccolo Machiavelli, in *The Prince* (1531), Ch. VI

Introduction:

There is no single unequivocal meaning that can be assigned to political economy. Whereas the concept of political economy prescumes a symbiotic relationship between politics and economics, the posting of relationship only creates a theoretical space where it can be spelt out. Consequently, a theoretical requirement of the use of political economy as method is the mapping out of the relationship. In the absence of such mapping, political economy tends to be buffeted between ' economism 'and 'politism' and seen as merely a perspective. But political economy is not merely a perspective, it is much more: it is concept and a method as well India's industrial licensing and regulatory policies, trade, tax, investments, and fiscal policies have undergone substantial changes. I have noticed in recent literature two opposed general positions on the pace and prospect of reforms. One of these takes the rosy view that dramatic changes in policy have taken place since 1991, and that more could be done but for the messy politics that occasionally slow down reforms, for example, those relating to the insurance section or industrial labour. But the reform process is now essentially irreversible, and most political leaders give assurances to this effect to business, despite historical deviations in some of their public speeches. The other view is more pessimistic, only the easier reforms have been handled so far while many difficult reforms have been stalled and

are likely to remain so, given the path of rag-tag coalition politics that the country seems to be inevirtably taking.

Political Reform: Phase I

We need to work at some aggregative statics on growth and investment, to give us some indication about the quantum of these changes in terms of macroeconomics outcome. Next we shall discuss some methodological points to help us interpret these data. Finally, we will move into issues concerning political economy.

For the macro-data, we shall draw upon the careful analysis of the National Accounts Statistics for the period of 1980-81 to 1995-96 made by Nagaraj (1997). One advantage of statistics is that they allow for a relatively long time series, and one does not have to depend on simple year-to-year variations in growth rates. On the basis of the time series one can say that overall GDP, as well as sectoral GDP In primary and tertiary sectors, roughly maintained its earlier (i.e., of the 1980s) growth rates in the 1990s. There have been no dramatic changes in these rates. In fact, there is a small but statistically significant decline in the secondary sector (including manufacturing) in the 1990s compared to the 1980s. (The addition last two years, 1996-97 and 1997-98, when data are available, is unlikely to change this, as on all indications the growth rates in the industrial sector have slowed down in these two years.)

Within the manufacturing sector, one expects some decline in import-substitute industries with trade liberalization. This has happened sharply in the capital goods industries. One indicator of the increased competition in these industries is the fall in prices of machinery and equipment relative to the GDP deflator since the late 1980s. Some consumer goods, particularly durables, experienced growth fuelled by a rise in effective protection (due to devaluation as well as fall in the relative price of inputs). Contrary to the usual expectation of the effect of trade liberalization, there has, however, not been much of an increase in the growth of traded, labour-intensive goods. In fact, the growth rate in the unregistered manufacturing sector (which employs nearly half the total labour in manufacturing) declined from an average of 7.6 per cent in 1986-91 to 5.7 per cent in 1992-96. There has also been a marked decline in growth rate of total employment in the

organized sector as a whole in the 1990s as compared to the 1990s. Again, contrary to expectation, some of the non-traded, tertiary sectors recorded a significant increase in growth. Much of the large rise in the growth rate in private corporate gross fixed capital formation has gone into the tertiary sector (most likely into finance and real estate). The share of infrastructure in total gross fixed capital formation in the economy declined from 37 per cent in 1986-97 to 26 per cent in 1995-96. This was associated with the decline in the public-sector gross capital formation as the percentage of GDP. It is now agreed on all counts that India's creaking infrastructure (power, railways, roads, ports, etc.) is the major bottleneck for industrial growth.

In interpreting the decline in the manufacturing growth rate in the 1990s, it is important to keep in mind one methodological point: the effect of liberalization should be carefully distinguished from those of macroeconomic stabilization. Some of the adverse effects of the credit crunch in the first half of the 1990s or the fiscal squeeze necessitated by the past and present profligacy in our public fisc should not be attributed to liberalization per se, even in cases where one could think of better ways of carrying out of corrective fiscal and financial policies. For example, the sharp decline in growth of the unregistered manufacturing sector noted above may have much to do with the difficulty of getting credit that this sector faced. It is also to be noted that growth rate in the 1980s, financed to some extent by large external borrowings, may have not been macroeconomically sustainable for long, and thus any comparison with the 1980s growth rate has to be qualified to that extent. It is also possible that it is yet too soon for the effects of the structural changes that have taken place since 1991 to show up in aggregative growth statistics. In scattered parts of the economy (including in some enterprises), increased competition and restructuring may have improved total factor productivity, but hard evidence for this on a sustained basis and an adequately large scale is not yet available.

The other methodological point to note in discussing the effects of policy changes is that some reforms came not by design, but more as unintended consequences of bankruptcy. This is particularly the case at the state level. Some reforms have generated a chain reaction creating a demand for pushing the

reforms further than what was originally intended. We shall come back to this point when we discuss the issue of creeping reforms.

Political Reform: Phase II

Next we discuss the politics of reforms. Politics is about distributive conflicts, about winners and losers, and how they get organized about it or fail to. Who are losers from reforms so far? The most vocal group in opposition is organized labour. Of course, not many jobs have been lost in government service (the part of the Fifth Pay Commission Report which recommended streamlining and reducing the future size of the government did not have any taking, in contrast to the part about pay revisions), although there is a fear of potential job loss from privatization. In contrast to the white-collar labour unions, the labour movement for the manual or blue-collar workers is actually highly fragmented, an issue we shall take up later. The other vocal group, ignoring the occasional vandalism against Kentucky Fried Chicken or Cargill Seed Farm by organized farmers, is that of Indian business houses. Some of them have been clamoring of a 'level playing field', when they perceived their traditional family control to be threatened by foreign multinationals. Patriotism is, of course, the first refuse of laggards in competition. Yet all major political parties (the Left parties, BJP, the Janata Party and even the Congress) have played the 'swadeshi' tune on this issue at election time.

The actual, as opposed to potential, losers 1990s may have been many small-scale enterprises. They were hit hard by the credit crunch, which was part of the macro-stabilization policy. It may, of course, be claimed even within the framework of stabilization, some government policies, for example, those inducing transfer of saving to the equity markets, may have made access to finance more difficult for small enterprises compared to large companies. With the freeing of bank lending rates and the fiscal concessions for deductibility of interest cost that the corporate sector enjoys, the interest-rate structure has become more regressive, to the disadvantage of the unorganized sector.

In the general, there has not been much political backlash against reforms and no serious pitched battles (as opposed to occasional rhetorical skirmishes) have been fought on the issue of liberalization. Many state-level political leaders, irrespective of

which party they belong to, have supported liberalization. If not for any other reason, simply because it has been associated with a more open-door policy for foreign investment, providing a way out of fiscal bankruptcy. The lack of serious opposition to reforms has sometimes been interpreted as evidence of lack of substantive reforms, because reforms are not supposed to be painless. This view is not quite correct. A more plausible view, as exposited, for example, by Jenkins (1997), is that there has been a great deal of piecemeal reform through a political process of diffusing resistance on part of the vested interests in various ways, without causing massive political confrontations. Like the stealth bomber, reform in India has largely avoided the political radar screen.

Phase III:

Along with political power drifting from the centre to the regions, there is an associated drift towards the backward and lower castes. This is clearly a sign of democratic progress in an unequal society. The numerical strength and increased assertiveness of some of the historically subordinate groups have compelled the upper classes and castes to form downward alliances and brought to the fore political actors from backward communities and regions. These players may be uninitiated in the etiquette of parliamentary democracy and in the social graces of modernity, but are quite astute in pursuing the interest of their constituencies (and, of course, their own self-interest). This victorious of march of democracy in India with all its banality and gaudiness would have impressed Alexis de Tocqueville (1835), who had described the turmoil in 19th century Europe generated by rising democratic aspirations in a highly unequal society.

What is disturbing, however, is that the diminishing hold of elite control and the unfolding of populist democracy to reach the lower rungs of the social hierarchy have been associated with a loosening of the earlier administrative protocols and a study erosion of the institutional insulation of the decision-making process in public administration and economic management. It is now common practice for a low-caste chief minister in a state to proceed, immediately upon assuming office, to transfer civil servants belonging to upper castes and get pliant bureaucrats from his or her own caste. Many members of the supposedly

independent civil service now try to curry favour with politicians to avoid transfer to undesirable jobs and locations. Administrative appointments outside the main civil service, like those to the boards of public-sector corporations, particularly those under state governments, are often used a political sinecures to keep the clamouring factions happy. What all this does to the institutional independence of economic decision-taking bodies or the credibility of commitment to long-run developmental policies in anybody's guess.

There is a certain nonchalance in the rampant corruption among politicians in the newly emergent groups. Lower-caste leaders, when they come to power, are sometimes quite unapologetic about being corrupt. They say that the upper castes in control of the state *have been corrupt for decades, and now it is their turn.* Corruption is thus seen as a collective entitlement in an amoral game of group equity.

Conclusion:

There may be larger politician-philosophical issues involved here. Many economists assume that market liberalism and competition is the natural order of things, and its unfolding in India has been blocked all these years only by our intellectual elite's socialist infatuation. It is not usually appreciated that Indian political culture may have a dominant anti-market streak that will not easily disappear, even if that supposedly imported infatuation fades away. Our collective passion for group equity, for group rather than individual rights, and the deep suspicion of competition in which the larger economic interests are given an opportunity to gobble up the small, work against the forces of market and allocational efficiency. This not surprising in a country where the self-assertion of newly mobilized groups in an extremely hierarchical society takes the form of long-suppressed, group-specific expression of clamouring for protected group-niches, where small people (small and middle peasants, self-employed artisans and shopkeepers, bazaar merchants and petty middleman, clerks, schoolteachers and service workers) constitute an overwhelming majority of the population, and their ranks are swelled by the inexorable demographic pressure and by the traditional inheritance practices involving subdivision of property

Gandhi*ji* had given sensitive and eloquent expression to this anti-market, anti-big capital, small-is-beautiful populism and mobilized it in the freedom movement against the British. Some other stands that grew out of our freedom movement, whether it is the ideas of Savarkar on the rights (emphasizing community pride), or on the left, those of Lohia (stressing lower-caste, self-assertion against the Westernized upper castes) or of Communists focusing on class mobilization-none of these ideas are overly concerned with individual rights-also put a premium on group equity and dignity rather than individualist liberalism in the public sphere (even though the Indian vision of spirituality is often individualistic). In recent decades, those bearing the legacy of the Gandhian moral critique of market expansion and competition have joined forces with those peasants, and other small people and their rights over resources, in building active grass-roots movements all over the country for the protection of the environment, of women's rights, and of the movement, 'development' or 'market' has almost become a dirty word, synonymous with dispossession of the little people and with despoliation of the environment. Major stands in the Indian political culture thus provide a none-too-hospitable climate for market reforms, and, contrary to the wishful thinking of many economists and journalists of the Indian 'pink press', the process of economic reforms is not likely to be smooth sailing for quite some time to come. The prospects for more reforms are not bleak, but one should not underestimate the scale and nature of opposition.

References:-

1. On the other hand, with imperfect competition, trade liberalization may increase the perceived elasticity of demand facing each firm, lower its mark-up, and increase output. The domestic market of Indian firms is, however, often regional segmented, reducing the impact of national-level competition.
2. The capital expenditure of the central state governments taken together as a proportion of GDP declined from 8.3 per cent in 1990-91 to 5.7 per cent in 1995-96.
3. A report of the Internal Group on Small Scale Industries in the Planning Commission in 1997 observes that capacity

utilization in this sector is only around 50 per cent, and one of the main factors responsible for this under-utilization is the inadequacy of credit.

4. Nagaraj (1997) refers to the significant rise in profitability (gross profit of percentage of capital employed) of central government public-sector enterprises in the 1990s in general, and in the plant load factor of thermal power plants in particular.
5. The threat as yet is largely exaggerated for the corporate sector as a whole-a comparison of the *business India* 100 in 19954 with the listing in 1978 suggests that the predominance of Indian business houses remains about the same. This is particularly the case in asset holdings. Foreign firms share in fixed asset formation in the corporate sectors remains at about 10 per cent in the 1990s, as can be seen from estimates of the Centre for Monitoring the Indian Economy (CMIE).

24. Sampling Technique in Research Methodology

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Introduction:

Sampling is the process by which inference is made to the whole by examining a part. Sampling is the process of selecting a small number of elements from a larger defined target group of elements such that information gathered. A sample is subset of the population. The sample size is the number of individuals in a sample. The more representative the sample of the population, the more confident the researcher can be in the quality of the results. A sample is defined as a smaller set of data that a researcher chooses or selects from larger populations by using a pre-defined selection method. These elements are known as sample points, sampling units or observations. Creating a sample is an efficient method of conducting research. In most cases, it is impossible or costly and time-consuming to research the whole population. Hence, examining the sample provides insights that the researcher can apply to the entire population.

Sampling is a technique of selecting a suitable sample for research. When you conduct research about a group of people, it's rarely possible to collect data from every person in that group. Instead, you select a sample. The sample is the group of individuals who will actually participate in the research. But a population is the entire group that you want to draw conclusions about while a sample is the specific group that you will collect data from. The main benefit of sampling is that, sampling saves money by allowing researchers to gather the same answers from a sample that they would receive from the population. There are different methods for selecting a sample. It will be truly representative only when it represents all types of units or groups in the total population in fair proportions.

Examples of Sampling -

Some examples of sampling are –

1) If a drug manufacturer would like to research the adverse side effects of a drug on the country's population, it is almost impossible to conduct a research study that involves everyone. In this case, the researcher decides a sample of people from each demographic and then researches them, giving him / her indicative feedback on the drug's behaviour.
2) The reporter asked a sampling of people about their eating habits.

Symbols –

Symbols used for population and sampling are -

N = Population	**n** = Sample Size
μ = Population Mean	**x** = Sample Mean
σ = Population Standard Deviation	**s** = Sample Standard Deviation
Π = Population Percentage	**p** = Sample Percentage

Meaning of Sampling:

In research terms a sample is a group of people, objects, or items that are taken from a larger population for measurement. The sample should be representative of the population to ensure that we can generalize the findings from the research sample to the population as a whole. Sampling is a technique of selecting individual members or a subset of the population to make statistical inferences from them and estimate characteristics of the whole population.

A finite subset of population, selected from it, with the objective of investigating its properties is called 'sample'. The number of units in the sample is known as sample size. Sample helps in drawing conclusion about the characteristics of the population. Sampling has received varied definitions by major authors on social research methods. It has been defined as "The process of selecting a smaller group of participants to tell us

essentially what a larger population might tell us if we asked every number of the larger population the same questions."

Definitions of Sampling:

Some important definitions of sampling are as follows.

1) "A sample as the name implies is smaller representative of a larger whole." **– Goode and Hatt**
2) "Sampling is the selection of certain percentage of group of items according to a predetermined plan." **– Bogardus**
3) "A statistical sample is miniature picture or cross section of entire group or aggregate from which the sample is taken." **– P.V. Young**
4) "The term sample should be reserved for a unit or portion of aggregates of material which has been selected in belief that it will be representative of the whole aggregate." **– Frank Yaton**
5) "Sampling method is the process or method of drawing a definite number of individual's cases or observation from a particular universe, selecting part of a total group for investigation."

– Dictionary of Sociology

In short, a sampling method means how a sample is selected from given population. The larger the number of units observed for data collection, the more representative is the sample of its population. The sampling method employed for selecting a sample is important in determining how closely the sample represents the population.

Important Definitions:

1) Population –

Population is defined as the entire mass of observation, which is the parent group from which a sample is to be form.

2) Target Population –

Target Population is a set of elements larger than or different from the population sampled and to which the researcher would like to generalize study findings.

3) Population Element –

An individual member of a population is called population element.

4) Sample –

Sample is defined as a subset, or some part, of a larger population.

5) Sample Size –

The number of elements units in a sample is known as sample size.

6) Sample Space –

A space consisting of all possible samples is called Sample Space.

7) Sampling –

The method of taking the sample is known as sampling.

8) Sampling Frame –

List of each and every individual in the population is called as sampling frame.

9) Sampling Fraction –

The ratio of sample size (n) to the population size (N) i.e. (n/N) is called sampling fraction.

10) Sampling Distribution –

The aggregates of the various value of the statistic under consideration so obtained, one from each sample may be grouped into a frequency distribution which known as 'Sampling Distribution' of the statistic.

11) Sampling Unit –

Sets of units considered for selection in some stage of sampling is called as sampling unit.

12) Sampling Scheme –

Method of selecting sampling units from population is called as sampling scheme.

13) Sampling Bias –

Sampling bias occurs when some members of a population are systematically more likely to be selected in a sample than others.

14) Census –

An investigation of all the individual elements that make up a population is called census.

15) Variable –

Any quality of quantity liable to show variation from one individual to the next in the same population is called as variable.

16) Variate –

Individual observations of any variable is called as variate.

17) Precision –

The deviation of the estimate from the average value is called precision. It is reciprocal of the variance.

18) Standard Error –

The standard deviation of the sampling distribution of a statistic is known as standard error.

19) Parameter –

A descriptive measure computed from the data of a population is called as parameter.

20) Estimator –

An estimator is a rule, function or formula of variates for estimating the population parameter.

21) Estimates –

A particular value of an estimator from a fixed set of value of a random sample is known as estimate.

22) Statistic –

A descriptive measure computed from a sample data is called as statistic.

Purpose of Sampling:

The purposes of sampling is discussed below.

1) The purpose of sampling is to provide various types of statistical information of a qualitative or quantitative nature about the whole by examining a few selected units.
2) To draw conclusions about populations from samples, we must use inferential statistics which enables us to determine a populations characteristic by directly observing only a portion or sample of the population.
3) In most cases, it is not possible and economical for researchers to study an entire population. With the help of sampling the researcher can save lots of time, money and resources to study a phenomenon.
4) It is proven fact that when a person handles less amount the work of fewer number of people, then it is easier to ensure the quality of the outcome.
5) Studying an entire population itself will take a lot of time and generating research results of a large mass will be almost impossible as most research studies have time limits. With the help of sampling we get quick results.

6) Conducting a study on an entire population provides researchers with voluminous data and maintaining precision of that data becomes a cumbersome task.

Characteristics of Sampling :

A good sampling must possess the following characteristics.

1) A sample design should be goal oriented.
2) A sample should be an accurate representative of the universe from which it is taken.
3) A sample should be proportional.
4) A sample should be selected at random.
5) A sample should be economical.
6) A sample design should be practical.
7) A sample should be designed so as to provide actual information required for the study.
8) A good sample should be truly representative in character.
9) Validity of a sample depends on accuracy and precision.
10) A good sample must be representative of the population.
11) A good sample must be adequate in size in order to be reliable.

Types of Sampling :

There are lot of sampling techniques which are grouped into two categories as -

A) Probability Sampling

B) Non-Probability Sampling

A) Probability Sampling –

Probability sampling is a sampling technique in which researchers choose samples from a larger population using a method based on the theory of probability. This sampling method considers every member of the population and forms samples based on a fixed process.

Example –

In a population of 1000 members, every member will have a 1/1000 chance of being selected to be a part of a sample. Probability sampling eliminates bias in the population and gives all members a fair chance to be included in the sample.

Types of Probability Sampling –

There are 6 types of probability sampling techniques.

1) Simple Random Sampling
2) Stratified Random Sampling
3) Systematic Random Sampling
4) Cluster Random Sampling
5) Multi – Stage Random Sampling
6) Multi – Phase Random Sampling

1) Simple Random Sampling –

The Simple Random Sampling is one of the best probability sampling techniques that helps in saving time and resources. In this method, every element has an equal chance of getting selected to be the part of a sample. Therefore this method is called 'Method of chance Selection.' It is used when we don't have any kind of prior information about the target population.

Example –

Random selection of 20 students from class of 50 student. Each student has equal chance of getting selected. Hence probability of selection is 1/50.

Types of Simple Random Sampling –

The types of Simple Random Sampling Techniques are as follows.

I) Lottery Method
II) Card or Ticket Method
III) Grid Method
IV) Regular Marking Method
V) Irregular Marking Method
VI) Quota Method
VII) Tippet Method

I) Lottery Method -

The Lottery method is one of the oldest method and is a mechanical example of random sampling. In this method, the researcher gives each member of the population a number. Researchers draw numbers from the box randomly to choose samples.

II) Card or Ticket Method –

The first step in this method is to prepare a list of all N units (N=100) in the population. And number them serially from 1 to 100. Then a sample of n units (n=20) is taken by the following method.

Taken N (100) cards or tickets bearing numbers from 1 to 100, these are thoroughly mixed and n (20) cards or tickets are drawn, one by one , from this lot and these numbers noted, mixing the cards or tickets thoroughly after each draw. Subsequently, the sample of 20 units is selected from the population which bears the numbers on these cards. This method is cumbersome and does not guarantee that units will be selected with equal probability. Human bias and prejudice may also creep in the method.

III) Grid Method –

Grid method is used for field selection. It is primarily used to select a sampling from large sphere (geographical field). In this method a large geographical area is considered as map is prepared. Similarly the units are decided. As per Grid method a transparent Grid plate is put on the map. This Grid plate is made of celulide or other transparent material. On this plate, boxes are made and numbers are written on that. The numbers are written in accordance with the sampling. Indication is done at the place where number is written on the map. Hence indicated part of the map are selected as geographical area for the sampling.

IV) Regular Marking Method –

In this kind of method, a list of the units in the population is prepared. The units are chosen as per the need of research in the samplings. For that purpose a number is fixed. The units are decided as per the distance of number. It may be 5^{th} , 7^{th}, 10^{th}, or any on the basis of distance in the number.

Example –

Suppose 40 respondents are to be chosen out of 280 people of the population, then it should be 280 / 40 = 07. The numbers which are included in the samplings as per the distance of 07 from the list of 280 people. For instance 7,14,21, 28,35, … such numbers are included in the samplings. In this manners 40 respondents are chosen out of 280. A beginning can be done from any number in the list.

V) Irregular Marking Method –

In this method, a list of all the units is made in the whole. They are given numbers. A researcher leaves the first and last number and makes indications on the other numbers in irregular methods. Thus samplings are selected.

VI) Quota Method –

In this sampling selection method, a whole is divided into various categories. The units of each category is decided and a researcher select the units from each category as per the need. These units are called sampling. In this method a researcher can select a unit. Therefore partiality can be made.

VII) Tippet Method –

According to this method the units of the population of the research have to be given the Tippets numbers. Also the required numbers of the sample have to be systematically selected by the method given by Tippet. It is to be remembered that the first number is to be necessarily randomly selected.

Tippet's random number tables consisting of 41,600 digits grouped into 10,400 sets of 4 digited random numbers. The 1st 40 sets from Tippet's table are –

2952	6641	3392	9792	7969	5911	3170	5624
4167	9524	1545	1396	7203	5356	1300	2693
2370	7483	3408	2762	3563	1089	6913	7691
0560	5246	1112	6107	6008	8125	4233	8776
2754	9143	1405	9025	7002	6111	8816	6446

For selecting 10 items out of 5000, the first 10 numbers upto 5000 should be selected.

- If the size of the population is less than 1000, for selecting 10 items out of 900, the numbers from 0001 to 0900 will be selected.
- If the size of the population is less than 100, for selecting 10 items out of 90, after writing down the number in pairs and reading either horizontally or vertically and ignoring the numbers greater than 90, the items may be selected.
- Sample depends entirely on chance, hence no possibility of personal bias affecting the results.

2) Stratified Random Sampling –

Stratified sampling techniques are generally used when the population is heterogeneous or dissimilar, where certain homogeneous or similar sub-populations can be isolated.

When the population is divided into different strata then samples are selected from each stratum by simple random sampling or by regular interval method is called as stratified random sampling method. When population is divided into different groups then it is called strata. A sample is drawn from each stratum at random.

Researchers and Statisticians use stratified random sampling to analyze relationships between two or more strata. As the stratified random sampling involves multiple layers or strata, it's crucial to calculate the strata before calculating the sample value.

Steps –

Steps to conduct stratified Random Sampling are –

a) Define the target
b) Recognize the stratification variable
c) Create a sample
d) Evaluate the sample
e) Define elements per stratum
f) Assign a number to each element
g) Figure out the size of each stratum
h) Select random elements from each stratum

Formula –

$$n_h = (N_h / N) \times n$$

where,

n_h = Sample size for h^{th} stratum
N_h = Population size for h^{th} stratum
N = Size of entire population
n = Size of entire sample

Example -

Let's say 100 (N_h) students of a school having 1000 (N) students were asked questions about their favorite subjects. It's a fact that the students of the 8^{th} class will have different subject preferences than the students of the 9^{th} class. For the survey to deliver precise results, the ideal manner is to divide each class into various strata.

Here's table of the number of students in each class :

Class	Number of students (n)
5	150
6	250
7	300
8	200
9	100

Stratified Sample (n_5) = (100/1000) x 150
= 15
Stratified Sample (n_6) = (100/1000) x 250
= 25
Stratified Sample (n_7) = (100/1000) x 300
= 30
Stratified Sample (n_8) = (100/1000) x 200
= 20
Stratified Sample (n_9) = (100/1000) x 100
= 10

Types of Stratified Random Sampling –

There are 3 types of Stratified Random Sampling.

I) Proportionate Stratified Random Sampling
II) Disproportionate Stratified Random Sampling
III) Weighted Stratified Random Sampling

I) Proportionate Stratified Random Sampling -

Proportionate Stratified sample means the size of the sample strata is proportional to the size of population strata. In other words, probability of unit being selected from the stratum is proportional to relative size of that stratum in population.

Proportionate sampling is a method of sampling in which the investigator (researcher) divides a finite population (stratum) into sub-populations (strata) and then applies random sampling techniques to each sub-populations (strata).

Example –

If you have 4 strata with 500,1000,1500,2000 respective sizes and the research organization select ½ as sampling fraction.

A researcher has to then select 250,500,750, 1000 members from the respective stratum.

Stratum	**A**	**B**	**C**	**D**
Population Size	500	1000	1500	2000
Sampling Fraction	½	½	½	½
Final Sampling Size Results	250	500	750	1000

Irrespective of the sample size of the population, the sampling fraction will remain uniform across all the strata.

II) Disproportionate Stratified Random Sampling –

A Sampling method in which the size of the sample drawn from a particular stratum is not proportional to the relative size of that stratum, then it is called disproportionate stratified sampling.

In disproportionate sampling, each stratum will have different sampling fraction.

Example -

Stratum	**A**	**B**	**C**	**D**
Population Size	500	1000	1500	2000
Sampling Fraction	½	$^1/_3$	$^1/_4$	$^1/_5$
Final Sampling Size Results	250	333	375	400

It is important to note that, only the difference between proportionate and disproportionate stratified random sampling is their sampling fractions.

The success of this sampling method depends on the researcher's precision at fraction allocation. If the allotted fractions aren't accurate, the results may be biased due to the overrepresented or underrepresented strata.

III) Weighted Stratified Random Sampling –

When a researcher is interested in examining distinct subgroups within a population, it is often best to use a stratified random sample to better represent the entire population. A stratified random sample involves dividing the population of interest into several smaller groups, called "Strata" and then taking a simple random sample from each of these smaller groups. This method is commonly used when we want to guarantee a large

enough sample from each subgroup. When this type of sampling method is used, it is important to use weights to take the relative size of each subgroup into account. This "Weighted Data" site introduces basic techniques used in estimating and testing population parameters using weights.

3) Systematic Random Sampling –

Systematic Random sampling is a probability sampling method in which a random sample, with a fix periodic interval, is selected from a larger population. The fixed periodic interval, called the sampling interval or regular interval, is calculated by dividing the population size by the desired sample size. i.e.,

Sample Interval (k) = Population Size/Sample Size

Researchers use the Systematic Random Sampling method to choose the sample members of a population at regular intervals. It requires the selection of a starting point of the sample and sample size that can be repeated at regular intervals.

This type of sampling method has a predefined range and hence this sampling technique is the least time consuming.

Example –

A researcher intends to collect a systematic sample of 500 people in a population of 5000. He / she numbers each elements of the population from 1 to 5000 and will choose every 10^{th} individual to be a part of the sample.

$$\text{Regular Interval } (K) = \frac{\text{Total Population}}{\text{Sample Size}}$$

$$= \frac{5000}{500}$$

$$K = 10$$

So, every 10^{th} people is chosen after a random starting point between 1 to 10. If the random starting point is 8, then the peoples selected are 8, 18, 28, 38, 48, 58…… up to 4998. In this way 500 peoples are selected. Therefore this sampling method is known as Systematic Random Sampling.

4) Cluster Random Sampling –

In cluster sampling , the whole population is divided into groups are clusters. Subsequently, a random sample is taken from

these clusters, all of which are used in the final sample. Cluster sampling is useful for those researchers whose subjects are fragmented over large geographical areas.

Cluster sampling can be done in following ways.

- **Single Stage Cluster Sampling -**
  Here entire cluster is selected randomly for sampling.
- **Two Stage Cluster Sampling -**
  Here first we randomly select clusters and then from those selected clusters we randomly select elements for sampling.
- **Systematic Clustering -**
  Here the selection of elements is systematic and not random except the first elements

Stages of Cluster Sampling –

- Choose clusters (groups) from population.
- Number each of the clusters.
- Select sample using random sampling.

Example –

A cluster may be something like a village or a school, a state. So you decide all the elementary schools in Maharashtra State are cluster. You want 20 schools selected. You can use simple or systematic random sampling to select the schools, then every school selected becomes a cluster.

5) Multi-Stage Random Sampling –

Multi-stage sampling is a process of moving from a broad to a narrow sample, using a step by step process. It is a further development of the principle of cluster sampling.

Example –

A study on working of a commercial banks in India.

First Stage : To select large primary sampling unit such as states in the country.

Second Stage : To select certain districts and study all banks in the chosen districts.

Third Stage : To select certain towns and study all banks in the chosen towns.

Fourth Stage : To select randomly sample banks from each selected towns.

As selection made at all stages randomly hence it is called as 'Multi-Stage Random Sampling'.

6) Multi-Phase Random Sampling –

Multi-phase sampling is a type of sampling design in which required information is collected from a large sample of units and additional information is collected from the sub-samples of the whole sample either at the same time or a later stage.

In multi-phase sampling, the different phases of observation relate to sample units of the same type.

B) Non-Probability Sampling –

The process of selecting a sample from a population without using probability theory is known as Non-Probability sampling.

Non-Probability Sampling is defined as, a sampling technique in which the researcher selects samples based on the subjective judgement of the researcher rather than random selection. It is a less stringent method. This sampling method depends heavily on the expertise of the researchers. It is carried out by observation and researchers use it widely for qualitative research.

Non-Probability Sampling is a sampling method in which not all members of the population have an equal chance of participating in the study. Non-Probability Sampling is most useful for exploratory studies like a pilot survey. (Pilot survey means deploying a survey to a smaller sample compared to pre -determined sample size). Researchers use this method in studies where it is impossible to draw random probability sampling due to time or cost considerations.

Types of Non-Probability Sampling –

There are 7 types of Non-Probability Sampling techniques.

1) Convenience Sampling
2) Purposive Sampling
3) Quota Sampling
4) Self -Selection Sampling
5) Extensive Sampling
6) Area Sampling
7) Snowball Sampling

1) Convenience Sampling –

The convenience sampling is also known as 'accidental' or 'haphazard' sampling. In convenience sampling, no pre-planning is necessary for the selection of items. Here the samples are selected based on the availability. Convenience sampling involves choosing respondents at the convenience of the researcher. This method is used when the availability of sample is rare and also costly. So based on the convenience samples are selected.

Researchers prefer this method during the initial stages of survey research, as it's quick and easy to deliver results.

Example –

Startups and NGOs usually conducts convenience sampling at a mall to distribute leaflets of upcoming events or promotion of a cause-they do that by standing at the mall entrance and giving out pamphlets randomly.

2) Purposive Sampling –

Purposive sampling is also known as judgmental, selective or subjective sampling. This sampling is based on the intention or the purpose of study. Only those elements will be selected from the population which suits the best for the purpose of our study.

This method need not be used when there are multi-purpose objectives involved in the study. The researcher has to pick up only such sample which is relevant to his study. The researcher (investigator) should possess full knowledge of the population.

Examples –

1) If we want to understand the thought process of the people who are interested in pursuing master's degree then the selection criteria would be "Are you interested for Masters in ….?" All the people who respond with a "No" will be excluded from our sample.
2) If sample of 25 students is to be selected from a class of 90 students for analyzing the smoking habits of tobacco. The researchers would select 25 students who, in his opinion, are representative of the class.
3) Suppose, the researcher wants to study beggars. He knows the three areas in the city, where the beggars are found in abundance. He will visit only these three areas and interview beggars of his choice and convenience.

4) Popular Journals conduct surveys in selected metropolitan cities to assess the popularity of politicians and political parties or to forecast election results.

3) Quota Sampling –

Quota sampling is a type of non-probability sampling method. In this method, researchers create a sampling involving individuals that represent a population. Researchers choose these individuals according to specific qualities (traits). They decide and create quotas so that the market research sample can be useful in collecting data. These samples can be generalized to the entire population. The final subset will be decided only according to the interviewer's or researcher's knowledge of the population.

Quota sampling is useful when time is limited, a sampling frame is not available, the research budget is very tight or detailed accuracy is not important.

Example –

A researcher wants to survey individuals about what smartphone brand they prefer to use. He consider a sample size of 500 respondents. Also, he is only interested in surveying 10 states in the India. Here's how the researcher can divide the population by quotas.

- Gender : 250 males and 250 females.
- Age : 100 respondents each between the ages of 16-20, 21-30,31-40,41-50 and 50 +
- Employment Status 350 employed and 150 unemployed people . (Researchers apply further nested quotas. For ex. Out of the 150 unemployed people, 100 must be students)
- Location : 50 responses per state.

Depending on the type of research, the researcher can apply quotas based on the sampling frame. It is not necessary for the researcher to divide the quotas equally. He divides the quotas as per his need (As shown in the example where the researcher interviews 350 employed and only 150

unemployed individuals). Random sampling can be conducted to reach out to the respondents.

Types of Quota Sampling –

Quota sampling can be of two types.

1) Controlled Quota Sampling –

Controlled quota sampling imposes restrictions on the researcher's choice of samples. Here, the researcher is limited to the selection of samples.

2) Uncontrolled Quota Sampling –

Uncontrolled quota sampling does not impose any restrictions on the researcher's choice of samples. Here, the researcher chooses sample members at will.

4) Self-Selection Sampling –

Self-selection sampling is a type of non-probability sampling technique, that is based on the judgement of the researcher. This is a useful tool for researchers, who want people or organizations (units), to participate or volunteer as part of a study on their own accord. A sample is self-selected when the inclusion or exclusion of sampling units is determined by whether the units themselves agree or decline to participate in the sample, either explicitly or implicitly.

Example –

It is published in the newspaper that one should write their thoughts on a particular subject. The right thoughts are to be published. Hence many people write their thoughts on that topic. These thoughts are considered as a samplings.

5) Extensive Sampling –

Extensive sampling is a term used to denote sampling where the subject matter, or geographical converge, of a sample is diffused or widespread as opposed to intensive, where it is narrowed to a small field. Extensive sampling may refer either to a case where a wide variety of topics and covered superficially, rather than a few topics in detail or a large area is surveyed broadly, rather than a small area studied in detail. The term could also be used with reference to time, that is to say, of sampling covering a long period.

Extensive sampling involves enough existing background data to a formulate a comprehensive research design. Extensive sampling provides generalizations about large areas. In this kind of

samplings the factors which comes with the boundary are considered for the study.

Example –

The topic of studies is literate unemployed are wandering in search of employment. In this, all the educated unemployed people are considered as extensive samplings. But those who are literate unemployed and cannot struggled for the job are not considered as extensive samplings.

6) Area Sampling –

Area sampling is sometimes referred to as block sampling , especially in the United States. It is also a form of cluster sampling. Area sampling is a method of sampling used when no complete frame of reference is available. It involves sampling from a map an aerial photograph, or a similar area frame. For example, a city map can be divided into equal size blocks, from which random samples can be drawn. Although area sampling is most often associated with maps, sometimes the samples might be drawn from lists.

Area sampling is used a great deal in countries where there is no adequate population lists, which are replaced instead by maps. In this method, the total area under investigation is divided into small sub-areas which are sampled at random or according to a restricted process. In industrial hygiene, area sampling is used to monitor for the presence of hazards within an area. Area sampling is chiefly used to sample airborne contaminants, such as gasses and aerosols.

Example –

To monitor the amount of noise in the workplace. It is not suitable for monitoring direct exposure to toxins, that type of monitoring requires personal sampling of individual employees.

7) Snowball Sampling –

Snowball sampling is also known as chain-referral sampling. If the population is hard to access, snowball sampling can be used to recruit participants via other participants for a test or study. The number of people you have access to "Snowballs" as you get in contact with more people. It is called snowball sampling because once you have the ball rolling, it picks up more "snow" along the way and becomes larger and larger.

Snowball samplings helps researchers find a sample when they are difficult to locate. Researchers use this technique when the sample size is small and not easily available. This sampling system works like the referral program. Once the researchers find suitable subjects, he asks them for assistance to seek similar subjects to form considerably good size sample.

Snowball sampling is a non-probability sampling method. It doesn't have the probability involved, with say, simple random sampling (where the odds are the same for any particular participant being chosen). Rather, the researchers used their own judgement to choose participants.

Steps –

Snowball sampling consist of two steps.

1) Identify potential subjects in the population.
2) Ask those subjects to recruit other people.

These steps are repeated until the needed sample size is found. Ethically, the study participants should not be asked to identify other potential participants. Rather, they should be asked to encourage others to come forward.

Example –

You are researching experiences of homelessness in your city. Since there is no list of all homeless people in the city, probability sampling isn't possible. You meet one person who agrees to participate in the research, and she puts you in contact with other homeless people that she knows in the area.

Uses of Sampling :

1) Samples are used in statistical testing when population sizes are too large for the test to include all possible members or observations.
2) Sampling is a tool that is used to indicate how much data to collect and how often it should be collected.
3) Samples are used to make inferences about populations.
4) Sampling is a process used in statistical analysis in which a predetermined number of observations are taken from a larger population.

Merits and Demerits of Sampling :

Following are the merits and demerits of sampling method of data collection.

Merits of Sampling –

1) Economical -

It is economical, because we have not to collect all data. e.g. instead of getting data from 5000 farmers, we get it from 50-100 only.

2) Less Time Consuming -

As number of units is only a fraction of the total population, time consumed is also a fraction of total time. Number of units is considerably small, hence the time.

3) Reliable -

If sample is taken judiciously, the results are very reliable and accurate.

4) Organizational Convenience -

As samples are taken and the number of units is smaller, the better trained enumerators can be employed by the organization.

5) More Scientific -

The sample technique has four important advantages over census technique of data collections. They are Speed, Economy, Adaptability and Scientific approach.

6) Detailed Enquiry -

A detailed study can be undertaken in case of the units included in the sample. Size of sample can be taken according to time and money available with the investigator.

7) Indispensable Method -

If population is bigger , there remains no option but to proceed for this method. It is specially used for infinite , hypothetical and perishable populations.

Demerits of Samplings -

1) Absence of Being Representative -

Methods, such as purposive sampling may not provide a sample, that is representative.

2) Wrong Conclusion -

If the sample is not representative, the results will not be correct. These will lead to the wrong conclusions.

3) Small Population -

Sometimes populations is so small that proper samples cannot be taken not of it. Number of units are so less .

4) Specialized Knowledge -

It is a scientific method. Therefore, to get a good and representative sample, one should have special knowledge to get good sample and to perform proper analysis so that reliable result may be achieved.

5) Inherent Defects -

The results which are achieved though the analysis of sampling data may not be accurate as this method have inherent defects. There is not even a single method of sampling which has no demerit.

6) Sampling Error -

This method of sampling has many errors.

7) Personal Bias -

As in many cases the investigator chooses sample, such as convenience method, chances of personal bias creep in.

Importance of Sampling Technique :

1) Sampling helps a lot in research. It is one of the most important factors which determines the accuracy of our research or survey result. If anything goes wrong with your sample then it will be directly reflected in the final result.
2) Sampling is a statistical procedure of drawing a small number of elements from a population and drawing conclusions regarding the population. A population, also called a universe is the total collection of all the population elements, each of which is a potential case . Any part of the population is a sample.
3) In research design, population and sampling are two important terms. A population is a group of individuals that share common connections. A sample is a subset of the population. The sample size is the number of individuals in a sample. The more representative the sample of the population, the more confident the researcher can be in the quality of the results.
4) Generally, Sampling allows researchers to obtain enough data to answer the research questions without having to query the entire population-saving time and money. However, sampling differs depending on whether the study is quantitative or qualitative.
5) In statistics, a sample is an analytic subset of a larger population. The use of samples allows researchers to conduct their studies with more manageable data and in a timely manner. Randomly drawn samples do not have much bias if they are

large enough, but achieving such a sample may be expensive and time -consuming.

6) Sampling yields significant research result. However, with the differences that can be present between a population and a sample, sample errors can occur. Therefore, it is essential to use the most relevant and useful sampling methods.

Sampling Errors :

Three most common sampling errors are -

1) Sampling bias occurs when the sample does not reflect the characteristics of the population.
2) Sample frame errors occur when the wrong sub-population is used to select a sample. This can be due to gender, race or economic factors.
3) Systematic errors occur when the results from the sample differ significantly from the results of the population.

Epilogue :

Sampling is a procedure by which some members of a given population are selected as representatives of the entire population. A sample should be selected at random and should be adequately proportional. Sampling is acceptable only when it adequately reflects the population from which it is drawn. A sample should represent the population as a whole and not reflect any bias toward a specific attribute. It is a subset containing the characteristics of a larger population. A sample should be provide an adequate basis for the measurement of its own reliability. No sample is perfect representation of its population.

The sample design should be simple i.e. it should be capable of being understood and followed in the fieldwork. The ultimate test of a sample design is how well it represents the characteristics of the population its purports to represents. The sample size should be sufficiently large to provide statistical stability or reliability. The sample size should give accuracy required for the purpose of particular study. It should be large enough to represent the population properly. Sample should be selected carefully as improper. It is to be noted that, sampling is a source of error in the survey. The methodology used to sample from a larger population depends on the type of analysis being

performed, but it may include simple random sampling or systematic sampling.

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25. Importance of Seminar

Dr Nirupama Pathak, Dr Vartika Vashistha

Seminars are modern and advanced method of teaching which refers to a structured group discussion often in the form of an essay or a paper presentation on a theme. Nowadays, based on the psychological principles, learning process requires an interactive and integrated methodologies. These techniques provide good learning and scholastic experience to the participants. The seminars are a method of teaching as well as assessing which indicates the sensitivity to context. These contexts are represented as the resources available to the teacher and students, learning preferences, resources. Resources are related to the classroom materials and seminar environment.

Seminar based leaning are excellent opportunity to the students to learn on a particular topic in depth by themselves and get clarification to their doubts during the seminar presentation and discussion time.

Since ages, seminars are being used as a teaching method. Socrates, used seminars for engaging students in the teaching and learning process by creating situations that require students to think and analyse to understand the underlying meaning of Socrates words. These classes have promoted independent learning along with intellectual curiosity (Bates, 2016).

These methods of teaching are considered as the Dewey's Principles that emphasises on creating opportunities through which students interact and form on their knowledge with the help of teachers working as facilitators and guides. Hence, teachers should not give spoon-feed knowledge to their students (Weber, Gabbert, & Patrick, 2007). Thus, students are viewed as contributors in shaping reality and finding truth by bringing their experience, identity, and values into the learning and teaching process (Dewey's principles, cited in Bates, 2016).

Seminars are beneficial as it promotes participants to enhance reading and writing skills because they read variety of sources and synthesize data that serves the purpose of the seminar (Padgett, Keup, & Pascarella, 2013; Playmouth, 2011). Also,

provides a platform for others (researchers, teachers or students) to share their findings of research while receiving regular feedback from the attendees through discussion.so, this increases participants' knowledge and also creates an intellectual atmosphere in the work or study place and this ensures keeping participants up-to-date with the current issues in the field of discussion (Illinois, 2015). These methods improves communication, management and presentation skills for both the presenter and participants and also offers a great way of gaining information (Chowning, 2009; Polly, Fraizer, Hopper, Chaman, & Wells, 2012).

"Reading maketh a full man; writing an exact man; and conference a ready man" by Francis Bacon. The seminar method integrates reading, writing and talking skills which are essential for the personality development of a man. The seminars are employed to realize the higher objectives of cognitive intelligence. The higher learning process requires interactive and integrated methodologies which are based on the psychological principles. Seminars advocate and support experiential learning where students are contributors in finding truth and forming their own perspective of the truth through experience.

Aim & Objectives are to realize the higher objectives of cognitive intelligence and also to develop higher cognitive abilities, to seek clarification, to develop co-operation and respect of ideas of others and to acquire characteristics of putting questions and answering effectively.

Advantages of Seminar:

1. Motivation and learning experience
2. Creativity
3. Dissemination and retrieval of information scientifically
4. Students' interaction
5. Enhances the learning capability of the students
6. Sufficient knowledge about the concerned subject
7. Developing the questioning skills;

Types of Seminars:

1. **Mini seminar:** Coverage is between a small group. Also termed a group discussion. It emphasizes on the questioning ability of students as well as the information and presentation skills.

2. **Major seminar:** The seminar at an institutional level for a specific topic.
3. **National seminar:** These seminars are at national level in an organization. The subject experts/ delegates are invited to the seminar for discussion.
4. **International seminar:** The seminar conducted by an international organization or agency. It involves Theme of this seminar has wider aspects. Globalization, Renovation, Atomic energy agreements, Policies implementation and modification etc., are examples for themes of international seminars. A Nation or its body can conduct or organize the international seminar.

Steps involved in Seminar:

The seminar is a process which allows the persons to discuss a theme within a peer group with subject experts. The steps of the seminar method are classified in to following 3 steps:

1. Before seminar (pre seminar phase)
2. At the course of seminar (seminar phase)
3. After the seminar (post seminar phase)

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26 Teachers Vs Technology – A Critical Appraisal on the Quality of Education

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Abstract

There is a paradigm shift happening in the teaching-learning process across globe. More of the technologies have taken over the teaching-learning process. The teachers and students need to be trained in these technologies before they arrive in to the classrooms. However, several challenges are faced by these technologies especially when it was implemented during the Covid-19 pandemic. Though, technology is an inevitable part of student's life in the era of digital revolution, it's come with its own challenges. Teaching-learning will be more meaningful and quality of education indeed improved only when we overcome these challenges. In this chapter, we analyse some of the important technologies and how it will be helpful in the teaching-learning process. More importantly, how to go from theoretical learning to experiential learning using the augmented reality and virtual reality environment.

Keywords: Technology, NEP 2020, ICT, Digital learning, Augmented Reality, Virtual Reality

Introduction

The role of teachers in the teaching-learning process is highly critical from time immemorial. In pan-Indian traditions, a guru is more than a teacher, counsellor, father-image, mature ideal, hero, source of strength, even divinity integrated into one personality: traditionally, the guru is a reverential figure to the disciple or student, with the guru serving as a "counsellor, who helps mold values, shares experiential knowledge as much as

literal knowledge, an exemplar in life, an inspirational source and who helps in the spiritual evolution of a student" (Mlecko, 1982). In India, since ancient Vedic times education has been given an important place and has set top priorities for the healthy upbringing of a child in every family. But, in today's context, teacher has their own power, which leaves its impact on the coming generation directly and indirectly (Rana, 2017). The education provided by a teacher helps a child to become an independent learner, creative student and a critical good thinker, a winner in many aspects of life. The word 'teach' is derived from an Anglo-Saxon word 'Taecon' meaning 'to impact', 'to instruct', 'to train', 'to make aware of' (Poole and Barnes, 1867). In other words, when a person who has knowledge in any field tries to pass on his/her acquired and accumulated knowledge to any person who is ignorant about that kind of knowledge and needs that knowledge it is an act of teaching (Rana, 2017). However, modern teacher is no more mere a teacher but a facilitator who facilitate in developing a learning among the students. But in a technology driven modern times, how a teacher can influence a student as a guide and motivator is a biggest question. In this chapter, we critically analyse how technology influences a teacher in a changing paradigm of post covid pandemic scenario.

Role of a Teacher

From time immemorial, the role of a teacher in the society is highly valued. Any progressive society keeps the system healthy by highly trained and knowledgeable teachers. The importance of a teacher is not new thing but even in the ancient system of education, it was felt and given due importance (Maheshwari, 2014). The role of a teacher is the centre of the fundamental reforms in the education system and they truly shape the future of our children - and, therefore, the future of the nation. (NEP 2020). Though they are constantly under the scrutiny of his/her students and the society at large, they are expected to conduct himself/herself in accordance with the ideals of the profession (Anonymous, 1989). The role of the teacher is vital even in the paradigm shift from chalk and board method to virtual online mode of teaching-learning process.

Since old occasions, instruction has been given a significant spot in our country. The Guru Kula custom is the most seasoned framework in our India (Cheng *et al*., 2002). Gurukulam has existed since the Vedic time. Allow us to contemplate through this article what is the Gurukulam custom, how was schooling done previously and how is the advanced instruction of the present period not quite the same as Gurukulam framework. The educator of the vedic time was viewed as the GURU or ACHARYA, and students as SHISYA. They were treated as family and maintained high respects to the guru (Joshi and Gupta, 2017). Being a teacher is not a simple task as they impart a wide amount of knowledge and exposure to the outside world to us, being a teacher requires energy, tolerance, aptitude regarding certain matter and enough capacity to comprehend the job of instructor, the styles of educating, showing procedures and methodologies, right utilization of assessment strategies and the brain research of the understudies just as the capacity to persuade the understudies.

ICT in education

In ancient days, the teaching was a one-way process and visual aids used in the teaching-learning process played an important role. Later, it was changed from one-way to two-way process by introducing some interactive sessions in the teaching-learning process. Information and Communication Technology (ICT) in education is the mode of education that use information and communications technology. This is to enable teacher and student in the teaching-learning process by giving adequate support, enhance, and optimise the delivery of information. ICT gives us power to use innovative educational resources and the renewal of learning methods, establishing a more active collaboration of students and the simultaneous acquisition of technological knowledge.

The modernized education training framework has developed over the long run and is impacted by the Western framework. It has been influenced by changes and advances in innovation. This instruction framework incorporates digital books, video addresses, video outlines, 3-D symbolism and so on strategies. The face of education is significantly changed over a time by adopting modern technologies. When ICT was introduced,

it was inside the classroom all the technologies need to be practiced. Schools and colleges which are equipped with smart classrooms can adopt this technology.

With that, they used visual pictures, animations, etc. They consistently have a solid allure contrasted with words. Utilizing projectors and visuals to help with learning is one more type of incredible innovative use. Top establishments all throughout the planet, presently depend on the utilization of stunning PowerPoint introductions and projections to keep the learning intelligent and fascinating. Innovative utilize, for example, projectors not really expensive and universities can take the association and interest levels straight up and furthermore further develop inspiration. Understudies like to see engaging visuals and something that tempts them to think as opposed to simply understanding words. The adapting part likewise turns out to be really proficient with regards to innovation.

Digital Technology

The Covid-19 pandemic has changed the face of education and it leads to shut down the physical classrooms. It paved the way to virtual learning, the change was sudden during the end of April 2020 when half of the world population came under some form of lockdown (Stephen, 2021). Though, the change was sudden teachers and students acclimatized this changing technology quickly. The utilization of the Internet resembles a gift for students. Today, the web is something present in nearly all that we use. From TV to gaming consoles, and our telephones, the web is in a real sense all over the place. The utilization of the web permits students to discover stunning comfort, they can discover different sorts of help, instructional exercises and different sorts of helping material which could be utilized to scholastically improve and upgrade their learning.

There are two technologies that revolutionized the face of education. They are Augmented Reality (AR) and Virtual Reality (VR). AR is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual (graphics), auditory (sound), haptic, somatosensory and olfactory (Wu *et al.*, 2013;

Schueffel, 2017). On the other hand, VR is a simulated experience that can be similar to or completely different from the real world. Applications of virtual reality include entertainment (e.g. video games), education (e.g. medical or military training) and business (e.g. virtual meetings) (Goode, 2019). AR and VR are important technologies that help students to enhance their knowledge while sitting in their houses. These technologies help in the experiential learning of the students. Even this was the emphasize of National Education Policy 2020 (NEP 2020) (Anonymous, 2020). In the modern digital era, industries and technology are increasing day by day. AR once was in its infancy (Cheng, and Tsai, 2012) but now because of digital revolution and covid-19 pandemic, everyone is switching from classroom learning to virtual learning.

These technologies can be considered as an important tool for experiential learning and help to enhance students to visualize and grasp concepts better and faster than the conventional chalk and talk method. The learning process is more effective and fruitful when one integrates these technologies in their curriculum. Another important pedagogical issue of implementing AR is that there may be a gap between the teaching and learning methods. This needs to be bridged by designers of AR learning environments (Wu *et al.,* 2013). Apart from this, there are many challenges like, growing distractions, reduced attention & concentration levels, lack of personalized attention and in-person learning emerges among students. These things can be overcome by game-based or video-based learning and introduction of tech tools to students. Another important pedagogical challenge in AR or even in VR is that teachers cannot customize some of the content based on the student needs and ability (Wu *et al.,* 2013).

Challenges faced by Teachers

In the current world, education has flourished in instruction as well as in each profession. It is the cutting-edge method of getting things done. Many schools and universities have taken on the web in their schooling framework. A few schools significantly offer web-based courses from an advanced stage. Professional identity and role of teacher challenged in the era of digital world and NEP 2020. Professional identity is defined as the various self-imposed or other-attributed meanings of "who one is" as a

professional (Lai and Jin, 2021). Integration of various technology in to the teaching profession is a great challenge. Zemsky and Massy (2004) identified that there are four stages of technology integration: 1) enhancement to traditional course configurations (i.e., providing digitalized learning materials); 2) course management systems (i.e., to organize and distribute teaching materials and facilitate teacher/student interaction); 3) imported course objects (i.e., providing richer and motivating learning materials and experience); and 4) new course configurations (i.e., to make substantial changes to the way of teaching to facilitate students' learning process). Many teachers are stuck in the first stage itself because digitalizing the learning materials is not simple task for many teachers who are not familiar with technologies. Though, this issue can be solved by the emergence of computer-based electronic books (i.e., digital versions of books), often known as "e-books,". They provided users with an efficient and effective tool for learning and teaching purposes (Tang, 2021). T

Challenges faced by Students

Apart from the teachers, students also facing a lot of challenges in Augmented Reality or Virtual Reality. In AR environments, student must be a multi-tasking and overloaded with ocean of information. This affects the learners in their learning process. Furthermore, Students will be provided by AR environment both reality and fantasy and they are blended but this mixed reality could cause students' confusions (Wu *et al.,* 2013). Though technology can help students by making learning more engaging and collaborative manner, it has its own problem. In many cases, it is not warranted memorizing facts rather helping to critically think. But the evaluation method what they are facing checks their memory skills. This is a great difficulty faced by undergraduate students in India. The use of technology in education impact greatly in learning process. However, the technology must be used appropriately and contextually (Bryant *et al.,* 2020). If its not used appropriately, then learners will find it difficult to cope up with it.

Conclusion

The technology what we are adopting for teaching-learning process is at nascent stage in India. We need to go long way. There is a lot of changes happened in educational technology landscape. In US, they have the policy document for technology in education starting from 2010 and latest in 2017 (Anonymous, 2017). But in India, after a gap of 35 years, we have a new education policy which directs us to adopt new technologies to improve the teaching-learning process (Anonymous, 2020). In this scenario, there is a need of the hour to train our teachers in the new technologies and for that we need good infrastructure at schools and colleges. The students also need to be train to adopt these technologies. So that their analytical skill will be augmented a lot. This will definitely bring a change in the quality of education in India.

Acknowledgements

Authors wish to thank the management especially the Rector, Rev. Fr. Swebert D'Silva, SJ, the Principal Rev. Fr. Dr. Victor Lobo, SJ of St. Joseph's College (Autonomous) and Dr. Jayarama Reddy, Head of the department of Botany, St. Joseph's College (Autonomous) for providing all the necessary facilities, encouragement and congenial environment for research and teaching at SJC.

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27. Educational Research Methodology

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Introduction :

Research is an essential and powerful tool in leading man towards progress. Without systematic research there would have been very little progress. Research that develops our critical thinking skills, gives us knowledge and learning's and also provide us an information that we can apply or use in our daily life. Research is search for facts and knowledge. Research is really important because it reveals reality and unreality. The scientific research leads progress in some fields to life. New products, new facts, new concepts and new ways of doing things are being found due to ever-increasing significant research in the physical, the biological, the social and the psychological fields. Research today is no longer confined to the science laboratory.

Education is an integral aspect of every society. In education, the research has most important value today. Educational research is a type of systematic investigation that applies empirical methods to solving challenges in education. It adopts rigorous and well-defined scientific processes in order to gather and analyze data for problem-solving and knowledge advancement.

Examples of Research –

Some examples of basic research are -

1) A study looking at how alcohol consumption impacts the brain.
2) A study to discover the components making up human DNA.
3) A study accessing whether stress levels make people more aggressive.
4) A study looking to see if gender stereo types lead to depression.

Meaning of Research :

The word 'Research' is developed from two words i.e. 'Re' and 'Search'. It means to search again. So research means systematic investigation or activity to gain new knowledge of the already existing facts. In other words, research means the creation of new knowledge and the use existing knowledge in a new and creative ways so as to generate new concepts, methodologies and understandings. This could include synthesis and analysis of previous research to the extent that it leads to new and creative outcomes.

Definitions of Research :

Some important definitions of research are as follows.

1) "Sufficiently objective and systematic to make possible classification, generalization and verification of the data observed in known as research " **- Jorg A. Lundburg**
2) "Research is a more systematic activity directed towards discovery and the development of organized body of knowledge " – **J.W. Best**
3) " Scientific research is a cumulative process it is also a rejective process especially in the social sciences. Understanding can be (advance) not only by gains in knowledge but also by discarding outworn assumptions" – **Hering**
4) "Systematized investigation to gain new knowledge about social phenomena and problems is known as social research " – **C.A. Moser**
5) " Social research is the investigation of the underlying processes operative in the lives of persons how are in association " – **E.S. Bogardus**
6) "Systemized effort to gain new knowledge, we call research " – **Redman and Mori**
7) "Research may be defined as a method of studying problems whose solutions are to be derived partly or wholly from facts " – **W.S. Monroes**
8) "Research is careful critical inquiry or examination in seeking facts or principles diligent investigation in order to a certain something"– **Weasters Internationals Dictionary**

In short, research means a searching made for something especially with care also a continued careful investigation into a subject, in order to discover facts or principles.

Purpose of Research :

The purposes of research is discussed below.

1) The main purpose of research is to inform action.
2) The purpose of research is to further understand the world and to learn how this knowledge can be applied to better everyday life.
3) The purpose of research is to enhance society by advancing knowledge through the development of scientific theories, concepts and ideas.
4) Research is for exploration, in order to know more about a topic that provides little information in general.
5) Contribute to developing knowledge in the field of study.
6) Gather evidence for theories.

Characteristics of Research :

Following are the characteristics of research.

1) The research should focus on priority problems.
2) The research should be systematic.
3) The research should be logical.
4) The research should be reductive.
5) The research should be replicable.
6) The research should be generative.
7) The research should be action-oriented.

Types of Research :

Types of Research are as follow.

1) Quantitative Research
2) Qualitative Research
3) Descriptive Research
4) Analytical Research
5) Applied Research
6) Fundamental Research
7) Exploratory Research
8) Conclusive Research
9) Longitudinal Research
10) Cross-Sectional Research
11) Action Research
12) Mixed Research
13) Pure or Theoretical Research

Benefits of Research :

1) Research expands your knowledge base.
2) Research gives you the latest information.
3) Research helps you know that you're up against.
4) Research builds your credibility.
5) Research helps you narrow your scope.
6) Research teaches you better discernment.
7) Research introduces you to new ideas.

Educational Research :

Educational research means the purification of the educational processes. It is a systematic application of scientific methods to provide solutions to educational problems. Educational Research is the scientific field of study that examines education and learning processes and the human attributes, interactions, organizations, and institutions that shape educational outcomes. Scholarship in the field seeks to describe, understand and explain how learning takes place throughout a person's life and how formal and informal contexts of education affect all forms of learning. Education research embraces the full spectrum of rigorous methods appropriate to the questions being asked and also drives the development of new tools and methods.

Types of Research Methods :

There are 3 main Research Methods.

1) Historical Research Method
2) Experimental Research Method
3) Descriptive Research Method

1) Historical Research Method -

Historical Research Method is also called the documentary research, as it makes use of historical documents and other records. Historical method seeks to find explanation of question of current interest by an intensive study of past. Many studies in the field of economics, politics, education, sociology, history and psychological are essentially historical in approach. Historical method may be defined as a system in which present day events are studied with reference to the events that took place in the past.

Historical research deals with the past experiences, its aim is to apply the method of reflective thinking of social problems, still unsolved, by means of discovery of past trends of event, fact and attitude. It traces the lines of development in human thought

and action in ordered to rich some basis for social activity. Historical research is the application of the scientific method of inquiry of historical problems.

Historical Research relies on a wide variety of primary and secondary sources including unpublished material.

Primary Sources –

- Eyewitness accounts of events.
- Can be oral or written testimony.
- Found in public records and legal documents, minutes of meetings, corporate records, recording, letters, diaries, journals, drawings.
- Located in University archives, libraries or privately owned collections such as local historical society.

Secondary Sources –

- Can be oral or written.
- Secondhand accounts of events.
- Found in textbooks, encyclopedias, journal articles, newspapers, biographies and other media such as films or tape recordings.

Examples -

1) An example of historical is a document like the Declaration of Independence.

2) Study of historical events like wars, revolutions etc.

2) Experimental Research Method -

Experimental Research Method is a scientific method. This method gives more precise, accurate and reliable results. It is just like an observation under controlled conditions. It acts on the law of single variable and causing factors. It studies cause and effect relationship. It is a systematic and logical method for answering the question. In this, the researcher seeks to evaluate something new. It leads to contribution to the already acquired fund of knowledge.

The three essential elements is an experiment are control, manipulation and observation. In this, experimenter as to imagine that research conditions are entirely new. They were not existing previously and recently. It is a method in which we study the effect of dependent variable or independent variable. Whatever we know about the environment, is possible only by observation. All types

of experiments are related with observation and generalization of these observed facts and it is also possible to test the internal validity.

Example –

To test the effects of a new drug intended to treat a certain medical condition.

3) Descriptive Research Method -

Descriptive Research refers to the methods that describe the characteristics of the variables under study. Descriptive research is called an observational research method as none of the variables in the study are influenced during the process of the research. Descriptive research method is nothing but a survey method. The survey is an important tool to gather evidences relating to certain social problems. The term social survey indicates the study of social phenomena through a survey of small a sampled population and also to brought segments of population. It is concerned with the present and attempts to determine the status of the phenomenon under investigation.

A social survey is a process by which quantitative facts are collected about the social aspect of a community composition and activities. The survey is in briefly a method of analysis in scientific and orderly form for defined purpose of given social situation of problem and population.

Tools of Data Collection :

In research, different tools are used for data collections. The main tools are -

1) Observation
2) Questionnaire
3) Interview
4) Schedule

1) Observation -

The cause effect relationship and study of events in original form, is known as observation. Observation employs relatively more visual and senses than audio and vocal organs. Observation is recognized as the most direct means of studying people when one is interested in there overt behavior.

2) Questionnaire –

A questionnaire is a systematic compilation of questions that are submitted to a sampling of population from which information is desired. In general, the word, questionnaire refers to a device for securing answers to questions by using a from which the respondent fills in himself.

3) Interview -

Interview is fundamentally a process of social interaction. Interview consist of dialogues between to or several persons. An interview is nothing but meeting of person face to face on some points. The interview may be regarded as a systematic method by which one person enters more or less imaginatively into the inner life of another who is generally a comparatively strange to him. Interview method is the best tool of data collection.

4) Schedule -

When a researcher is using a set of questionnaires for interview purpose it is known as schedule. Schedule is the name usually applied to set of question, which are asked and filled by an interviewer in a face to face situation with another. By a schedule we cannot, however, obtain information about many things at once. It is best suited to study of single item thoroughly.

Research Problem :

Research Problem is a question which is to be solved. The Problems lie everywhere around us. A research problem helps you formulate that sequence. Research problem also helps you avoid unnecessary steps during the research. A research problem is the preliminary step in conducting a research study. A research problem helps you understand the research procedure in a better manner. It is to be noted that, selection of problem is not the first step in research but identification of the problem is the first step in research. Selection of problem is govern by reflective thinking. The problems concerns with the functioning of the broader area of the field studied, where as a topic or title or statement of the problem is the verbal statement of the problem.

The Sources of Research Problem –

1) Problems which arise from the workplace.
2) Strategic level research problems.
3) Executory management research problems.
4) Operational management research problems.

5) Needs analysis as source of research problems.
6) Knowledge gaps.
7) Omitted groups.
8) Conflicting findings.

Hypothesis :

A research hypothesis is a statement of expectation or prediction that will be tested by research. It describes in concrete terms what you expect will happen in your study. A hypothesis is an assumption, an idea that is proposed for the sake of argument so that it can be tested to see if it might be true. A hypothesis is usually tentative, it's an assumption or suggestion made strictly for the objective of being tested.

Importance of Hypothesis :

In research the hypothesis is most important. A hypothesis serves as powerful beacon that lights the way for the research work. It provides direction to the research and frame work for drawing conclusion. Without hypothesis a research is unfocussed research and remain like a random empirical wandering. Hypothesis serves as necessary link between theory and the investigation. It provides a basis or evidence to prove the validity of the research. The purpose of a hypothesis is to find the answer to a question. Hypothesis acts as a guide master in research. It gives new knowledge and direction to a researcher.

Research Report and its Importance :

Research reports are recorded data prepared by researchers or statisticians after analyzing information gathered by conducting organized research, typically in the form of surveys or qualitative methods. A research report is a well-crafted document that outlines the processes, data and findings of a systematic investigation. It is an important document that serves as a first-hand account of the research process and it is typically considered as an objective and accurate source of information. In many ways, a research report can be considered as a summary of the research process that clearly highlights findings, recommendations, and other important details. Reading a well-written research report should provide you with all the information you need about the core areas of the research process.

The purpose of a research report is to demonstrate or develop your ability to undertake a complete piece of research including research design and an appreciation of its significance in the field.

In short, a detailed account of the research experience from selection and definition of the problem, formulation of hypotheses, gathering, analyzing and interpreting data, testing of hypotheses, making conclusion and suggesting further research in the related problem area is called a Research Report.

Research report is an important part of research activity. With a research report, it is easy to outline the findings of your systematic investigation and any gaps needing further inquiry.

The essential features of a good research report are as –

1) Clarity
2) Conciseness
3) Veracity
4) No lengthy digressions
5) Only necessary details

Utility of Educational Research :

Any research is important for the betterment of society because, research is associated with social issues. The research is not useful which does not solve the social problems. The people can use the research of the researcher for the development of society. Research is not only important for society but also for the authority. On the basis of research the government can decide the useful policies so that humanity can take advantage of the scheme. The researcher has to be very careful about the moral values. He should strictly follow these moral quotes while doing research. Through research a Project which is benefitted for the society, can be brought out.

The primary purpose of educational research is to expand the existing body of knowledge by providing solutions to different problems in pedagogy while improving teaching and learning practices. Educational researchers also seek answers to questions bothering on learner-motivation, development, and classroom management.

Importance of Educational Research :

Research is important in every field such as Art's, Commerce, Science, Medical, Agriculture, Pharmaceuticals, Engineering, Law, Account, Humanity, Social Science, Space & Technology, Cosmetics and so on. Now a days research has a lot importance in education. There are so many new trends emerged in education. Education is an inseparable part of human being. The educational research is important for the students because it helps them to have a detailed analysis of everything.

Epilogue :

Research is an imperative area in not just the field of education but in other fields as well. It purifies the working and the lives of the individuals. It primarily focuses upon improving quality and is a search for knowledge. It shows how to make provision of solutions to problems in a scientific and methodical manner. It is a systematic effort to acquire new knowledge in all disciplines. Educational research is nothing but providing solutions to any educational problem. Educational research is more formal, focused and an intensive process of carrying out a scientific method of analysis. Educational research is the part of behavioral sciences, in which, emphasis has been put upon understanding, explaining, predicting and to some degree controlling human behavior. Research in education is use of the methods of scientific analysis to produce information, needed to make improvements in educational planning, decision making, teaching and learning, curriculum development, understanding of children and youth, use of instructional media, school organization and education management. Research in education has rendered an imperative contribution in acquiring information regarding different cultures, norms and values.

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28. Women Education for Socio-Economic Empowerment and Its Significance in the Field of Development of a Nation

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Introduction:

Education is a process of development of all human abilities and behaviours. In the broader sense education is a continuous process it begins at birth and continues throughout life. It is the key which opens the door to life, develops humanity and promotes national development. Education can be an effective tool for women's empowerment. It enables rural women to acquire new knowledge and technology required for improving and developing their tasks in all fields. It is also treated as a process of development. It helps to develop all the innate or original or inborn capabilities of the human child.

Women constitute roughly half of the world's population. They are an integral part of the Indian Economy and have a great potentiality to contribute to the development of our country. Their capability and efficiency can be increased by means of education. Empowerment of women is one of the concepts that have developed in connection with improving their status. Empowerment includes higher literacy levels, education, better healthcare, equal ownership of productive resources, increased participation in economic and commercial sectors, awareness of rights and responsibilities, improved standards of living, self-reliance, self-esteem and self-confidence. It also means to develop in them the ability to judge what is right and wrong, also enables women to make the rightful adjustment to the situation. Specially, an

empowerment woman is self-confident and recognizes her own potentialities. It also helps in making her conscious of her financial contribution to the house and the society at large. Also women empowerment enables autonomy and control over their lives. Women empowerment enables become agents of their own development, able to exercise choice to set their own agenda and be strong enough to challenge their sub-ordinate position in the society. So in the field of development of nation the role of women education is very significant.

An objective gives the way to go forward. So, the main objective of the paper is that to criticize evaluation of women education in the field of socio-economic empowerment and an attempt has been made to how much relevant of women education in the present day context especially in the field of development of a nation.

The study is mainly based on descriptive method which provides a method of analytic. As methodology, secondary data is used in the present analytical paper and as secondary data I have collected from various sources like *Books, Research Articles, internet, Magazine, thesis, journals etc.*

Dynamic Concept of Women Education and Empowerment:

Women education received by women who would make them becomes aware of themselves and their capacity to exploit their environment. Women education is therefore as a process whereby women are given equal access to knowledge, skills, jobs and participation in the wider society. This type of education involves training in literacy and vocational skills, to enable them become functional in the society, especially in their homes. Education, especially for women, is an important agent of socialization, and instrument of social transformation, and a channel of social mobility and equality. Education of girls and women has to be a universal movement for their empowerment, for changing current stereo-typed and replacing the existing structures. Women are the agents of change. Education is considered a key instrument for this change, which is responsible for national development.

Education is the most important thing for women to pursue aggressively as they continue their fight to be recognised for what they are: dynamic, vital, biologically heroic people. Educated women are better placed to be gainfully empowered than the uneducated women. In many countries of the world including India, the role played by women is slowly moving out of domestic services to nursing, teaching and into many occupations hitherto reserved for men. This development is as a result of women educational empowerment. This educational empowerment has placed women on economic, social, health and academic advancement.

Empowerment: Dynamically we can say that women empowerment means equal status, opportunity and freedom to the women for their upliftment. It refers to the dignity and right of the women towards their social life especially in the field of social, political and economic spheres. Especially it means development of an individual in social, family and community. The knowledge, competency, value and attitude of an individual can be developed through education. Empowerment is the process of enabling an individual to think, behave, and take action and central work in an autonomous way. It is the process by which one can gain control over one's destiny and the circumstances of their lives.

With this concept also we can simply indicate that about the empowerment of women. Empowerment of women is one of the concepts that have developed in connection with improving their status. Empowerment includes higher literacy levels, education, better healthcare, equal ownership of productive resources, increased participation in economic and commercial sectors, awareness of rights and responsibilities, improved standards of living, self-reliance, self-esteem and self-confidence. Women empowerment is the burning question not only Assam but also all India as well as all over the world. Women empowerment does not mean shouting for rights of women. It means making them able to take the right decision at the right place and at the right time. It also means to develop in them the ability to judge what is right and wrong, also

enables women to make the rightful adjustment to the situation. Specially, an empowerment woman is self-confident and recognizes her own potentialities. It also helps in making her conscious of her financial contribution to the house and the society at large.

Significance in the field of Development of a Nation: We now that without contributions of women we cannot think about overall development of a nation. So in the field of overall development of a country as well as a nation the role of women education is very relevant. So, here I would like indicate some relevant points -

- Women education in India plays a very important role in the overall development of the country. It not only helps in the development of half of the human resources, but in improving the quality of life at home and outside.
- Educated women not only tend to promote education of their girl children, but also can provide better guidance to all their children. Moreover educated women can also help in the reduction of infant mortality rate and growth of the population.
- Socially, education liberates a woman from cultural activities that are inimical to the advancement of the woman folk. Educated women are able to challenge human rights violation, wife battering and many other unhealthy cultural practices.
- Besides, education of women helps to improve their health and sanitary conditions and that of their families. Health is paramount in the survival and progress of any family or nation. The health standards of the family are determined by women and the more educated she is the better for the family and the entire nation.
- Also, the education of a woman does not only affect herself but also the society at large. This is because it is only when a woman is educated that she will be more interested in the education of her children, since she would have understood the value and benefits of education.

- Educated women can help her husband in his office work and also she is a support to her husband in times of trouble. In an emergency situation an educated women can get a job for her-self and can support herself and her children without any support from anyone. As an educated mother she can teach a lot of things to her children and she gives them elementary education and kept them neat and clean.
- Education for women is the best way to improve the health, nutrition and economic status of a household that constitute a micro unit of a nation economy. Specially, education alone is obviously not enough to solve the world's problems, but it remains an essential factor in any development activity

In the field of Socio-Economic Empowerment: Social development is a process which results in the transformation of social institutions in a manner which improves the capacity of the society to fulfil its aspirations. It implies a qualitative change in the way the society shapes itself and carries out its activities, such as through more progressive attitudes and behaviour by the population, the adoption of more effective processes or more advanced technology. On the other hand economic development is the development of economic wealth of countries or regions for the well-being of their inhabitants. It is often assumed to indicate the level of economic development. It is the process by which a nation improves the economic, political, and social wellbeing of its people.

The aspect of economic is the most and powerful instrument of the development of a nation as well as of a country. Without the strangeness of economic position we cannot think about of the advantages of family house, advantages of communication as well as all of the development aspects. So, in the field of development process, economic strangeness is very necessary. Man is social being. Without society, either man is a beast or an angel. Therefore society is most important aspect of people living life.

An educated woman can play a more dynamic role in addressing the economic challenges faced by her country, in the areas of agricultural production, food self-sufficiency, the fight against environmental degradation, the use and conservation of water and energy. The women are in no way inferior to men. So, women education can play a vital role in the field of socio-economic empowerment like the following aspects.

Women education in Self-Help Group: In the present scenario of socio-economic development, women empowerment is a vital issue not only for the development of women section of the society, but also is an urgent requirement for overall development of the society. Self-help group is instrument for economic empowerment of women. Micro finance programmes are currently being promoted as a key strategy for addressing both poverty alleviation and women's empowerment. Self-help group create empowerment promoting conditions for women to move from positions of marginalisation within household decision making process and exclusion within community to a vibrant individual with more enthusiasm and eager to take part in decision making body of the locality and beyond.

Women education in the field of Business: Business is a simple profession for human living. Through the business men or women can be self dependent. In this field the knowledge of education is very important. Because, without knowledge of education cannot expect the positive result of the business. So, if women are educated then the purposes of their business off course will progressive and can be do simple management. Therefore, for a profitable business the knowledge of education is very important especially for women. In the modern world, women are no longer confined to the role of homemaker. Today, she wholeheartedly contributes to the home and leads the workplace as well as. Into business regime, women are making incredible headways especially in micro, small or medium enterprises. Through the women education can develop step to step their positive business.

Women education in Production of Material wealth and Alleviation of Poverty: Economic productivity through education can only make the child useful, loyal and disciplined citizen of the country. Education is now universally accepted as very useful productive activity which promotes national prosperity and national welfare in various fields. Women education is thus an important means towards the production of material wealth. Besides, education has its economic aspect of consideration which has received priority at present. Women education removes poverty, as it produces skilled labour, and creates right attitude to work and development. Also, women education creates awareness for better living.

Women education in Development of Talents and Virtues: Individual may feel proud and can develop the sense of belongingness to the country only when she/he can make solid economic contribution to society. An awakened mind, right knowledge, appropriate skills and desirable attitudes has the great influence on economic development. Conceived and imparted correctly, through women education can produces these talents and virtues. It releases the dynamism and forward flowing energy, when are the assets for a developing nation. Besides, education helps to ensure that a country is competitive in world markets now characterized by changing technologies and production methods.

Conclusion: At the end would like to conclude that education is one of the most important sources of women's empowerment and is the strongest medium of social activity in creating new dimension of views towards women and in adopting the partnership in different activities and in expressing her thought. Specially, if the working opportunity is done by enhancing the rate of women education, the socio-economic condition of that country is possible to increase. Education enhances women's well being. It reduces violence against them, gives them a more autonomy in shaping their lives, improves their status within the family and gives them a greater voice in household decisions, including financial decisions. The social, economical, political and cultural

development of country or a nation depends on women empowerment and their active participation. Empowerment of women is a multi dimensional process. It involves economic opportunity, property rights, political representation, social equality, personal rights and so on. So, at the present day context especially in the field of socio-economic empowerment women education is very relevant.

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29. Restructuring and Revitalizing the Education through Quality

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Quality education refers to such an education through which we can solve the problems of poverty, hunger, malnutrition, deadly disease, economically productive, sustainability and promoter of humanity as well. Quality education can make us sustainable, reliant and reliable. Quality education has power to make learners economically self-dependent and humanity promoter, Capacity building, skill development and modernization in education is like the need of the hour. We are living in the era of 21st century where there is dense population around the world and population becoming denser ever year. We are the phenomenon of global activities. We need to balance ourselves in each and every sector. All these could be viable only through quality training since childhood. We need to develop quality education so that we can promote true democracy round the world. We can solve the various problems. We can promote peaceful existence of humanity,

Quality education could be developed through eliciting on various areas like Curriculum; technology based education. Teachers should also be trained in good way because teachers are the real builders of the Nation. The quality and competitive skills of teachers are very crucial in the all-round development of the students. NEP (National Education Policy) has concrete focus on student centric education. NEP 2020 has good emphasis over Teacher's skill development as well. Curriculum should be according to the requirement of the students. Quality chapters are already being incorporated and the unnecessary chapters are removed from primary to higher education level as well. Now anyone could choose any of the subjects. Students of science may read humanities and vice versa. It creates a propitious environment for students to read various subjects at a time.

In the developing nation, skill based education is required so that it can become viable for students to make carrier for their subsistence. Traditional education should be replaced with vocational education. Government of India already elicited over vocational education. NSDC (National skill Development corporation) already working in this field. Prime Minister skill development programme is being implemented all over the country in order to make the youths skilled. Youths are the future of the nation and hence they must be smart, skilled and Economy oriented. Quality education and Traditional education has some major differences.one must understand these differences first.

Quality education is quality based and not quantity based. It is like fetching cream from a gallon of milk. Quality education is subject centric, economically productive and problem solving. Technical education which is the need of the hour should focus more. Government of India along with state government must implement some concrete steps to provide quality education. Teachers should be trained in high way so that they could give their 100 percent contribution to their students. Various policies are already available to provide quality education throughout the country. Education is a powerful instrument and peaceful weapon that has power to uplift a country and make it competitive in multiple sectors like science and technology, Defense, medical, Nano science, geography etc. Educators can make the country prosperous and citizens Blithe. So, we need to understand the importance of education. Govt. Of India must invest 10% of the country's GDP on education sector to restructure and revitalize the education sector of the country. From pre schooling to University level quality education is required. To make the country developed, Research is imperative in every field. Research is the deep and thoughtful study of a particular subject or problem which is focused on the detailed explanation, prediction, and control of an

observed phenomenon. It plays a vital role in the enhanced understanding, organization, and analysis of the problem addressed, such as knowledge of the human body to society and culture, knowledge of nanometer-sized particles, or atoms (and subatomic particles) to a celestial body, to name a few. In this essay, we mainly focus on the importance of scientific and technological research, resolving societal issues, and developing a nation. It is well known that today's science is the technology for tomorrow. The advancement of technology leads to the development of a nation. However, without loss of generality, we can assert that science, technology, and the development of a nation are complementary to each other. To realize the subtle phenomenon in science, one requires cutting-edge technologies, and conducting such an experiment needs money, which is usually supported by public funds/PSUs. Let's understand the harmony between science and technology; in the present scenario, this world is suffering from the pandemic due to the novel COVID-19. Its prevention from the spread and curing of an infected person, requires PPE kits, N95 masks, development of the vaccine and its distribution, etc., in large amounts. The production of which couldn't be possible without technological advancement. We further divide this section into different parts to study the impact and importance of research in science and technology for the development of a nation.

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