JOURNAL
OF
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Multi-disciplinary, Peer Reviewed Journal

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From the Desk of
Editor-in-Chief

The undersigned takes pleasure in bringing out the 13th issue of 'JOURNAL OF EDUCATION AND DEVELOPMENT'.

This issue contains articles on various aspects of different subjects of the changing world. To keep the length of the issue within reasonable bounds, it has been necessary to be very selective in the incorporation of articles. Some of the articles still remain in the queue to get appropriate place in the next issue of the journal. The editor acknowledges his debit and gratitude to all members of the editorial board and to all contributors.

Suggestions for further improving the journal are earnestly solicited and will be cordially received.

Editor-in-Chief

Kalyani, West Bengal
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JOURNAL OF
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C O N T E N T S

The purpose of the journal is to foster inter-cultural communication among educators, teachers, academicians, administrators, researchers. nationwide coverage transactional collaborative effort in research and development and to promote critical understanding of educational problems in a global perspective.

Impact of Covid 19 on Education and Empowerment of Women

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ABSTRACT

Covid 19 pandemic has affected every aspect of human life. Women are much affected than men during pandemic situation. In patriarchal society women always suffer from disparites in carrier, empowerment and in essential needs. This pandemic effected their growth in society. Specially for the lower middleclass section of women They are the most affected groups. Many of them have lost their job. Who are working in different sectors getting small amount of salary. Girl children had to quit their education due to early marriage, sexual violence got and family oppration. It is a global issue. India as a third world country is trying to implement strategies for developing equality and sustainability in social system. Education plays a key role in it. Hence it is vital to provide such an education system for the girls child, so that equality is maintained and they aquare proper empowerment. Government should make proper strategies for that. Take proper precautions to stop discripencies between men and women. This analytical study was intended to discuss about the present condition of women in our society due to impact of a covid 19. It was also analyzed to get the answers of the questions such as; why women empowerment is much needed and what strategies should be undertaken by the government to fulfil the needs of women.

Key words – women, empowerment, Education, schemes, present scenario, strategies.

Introduction:

What is the meaning of 'empowerment'? is it only women's financial independence? Or reserving their seats in parliament? the answer of those questions are not very simple. Those are interlinked with many aspects and dimension .it depends on the willingness of women. When a women can speak freely, can do whatever she wants to do without help or fear or they are able to

satisfy their rights and duties, then we may say that they are empowered. It is all about their choice. the economic or financial independency is a basic component of empowerment. But the fact is That a large number of   women in our country are not duly empowered. The situation has worsen during last two years of covid pandemic conditions. A large number of women have lost their jobs, get betrayed by not paid proper salary in workplaces. Girls students have to leave their school and education for household chores. Child marriage and sexual abuse got increased during this period. The situation is very alarming s. We have to be more serious and aware about women empowerment.

Education is the only way to make it possible for successful accomplishment of the goal of empowerment. It helps to understand what is right and what is wrong. Education is an integral part of the society. If we want to empower women we have to provide them quality education. So that their innate quality, can be developed and they would be be more responsible towards society, with knowledge and power.

Objectives:

The objectives of the study 'women empowerment through education during covid 19 situation –

1. To estimate the need of women empowerment after covid 19 situation.
2. To find out the various schemes of Indian government for women empowerment.
3. To assess the present scenario of women empowerment after covid 19.
4. To prescribe measures or solution to make women empowerment after covid 19.
5. To estimate the importance of education in women empowerment.

Review of related literature

A few available related studies have been reviewed to indicate the gaps in the area of knowledge -

- Dr. Meera. K. p and k. M. Jamuna (2015) – did a research on 'Empowring Women Through Education'. They have shown the status of women in our country. Where should we have to focus and how we can make strategies for growth and development of women education.

- Bera Nabanita (2016) conducted a study on 'women empowerment through education'. She generally discussed the importance of women

education for their empowerment. She also added constitutional provisions of women empowerment.

- Dr. Devi R Uma (2019) – did a research on the 'scenario of women education and women empowerment in India'. Here she discussed about women literacy rate, women empowering through education, main barriers of women education in India.

- Mahato Anuradha and Dr. Barman Pranab (2020) did a research on 'Women Education and Empowerment in India'. In their study they have shown the true meaning of women empowerment. How education brings women empowerment and what is the meaning of women empowerment in India.

Need of Women Empowerment after Covid 19:

As we know that covid 19 has a devastating effect on every aspects of life, specially in socio economically backward women in society. According to Right to Education forum (Jan,2021) 10 million Indian girls has been dropped out of secondary schools. They could not afford or may be could not cope up with the whole paradigm shift of classroom learning to online learning.

Many middleclass or low-middleclass families did not want to invest their money on their girl child education. The main cause of this is that they had lost their jobs.

In this patriarchal society, women are always betrayed by gender stereotyping. When the male member of the family were allowed to go to school but the female members are not allowed to do so. They are bound to do household chores or so called 'girly' work. A Delhi based NGO find that 56.1% of girls said they have no time to focus on their study for their household work.

Child marriage rate got increased by this time. Domestic violence, sexual abuse got increased also.

To abolish this situation women have to be independent and empowered. They have to go to school. They have to be aware about their rights, they have to fight for their rights.

NEP 2020 is playing an important role for girls education, promoting women empowerment. Like –

1. Providing 100% quality education for women.
2. Setting up gender inclusion fund to build nation capacity and provide equitable quality education for girls as well as transgender students.

3. Make groups for giving them cycles and create walking groups for girls to school to enrich community participation.

4. Enhance the number of women in various leading posts of the institutions like teachers, principals etc.

Schemes by Indian government for women empowerment

There are so many schemes by Indian government (both central and state) for empowering women, such as;

Central schemes:

1. Beti bachao beti padhao scheme –

This scheme was launched on 2015 in Haryana. Its all about safety, awareness, and to ensure education of girl child.

2. Working women hostel scheme –

This scheme was launched in 1972–73. It provides housing and build new hostels to working women. It helps to boost women empowerment.

3. Women helpline scheme –

This scheme was launched in 2015. It provides to help those women who have suffered abuse in their professional and personal field. There is a toll free number where women are free to call.

There are also so many schemes like – Mahila E haat scheme for female entrepreneurs, Mahila police volunteers scheme, SWADHAR Greh for legal support and empowering women, STEP for giving work security to women, MSK (mahila shakti kendras) for showcase their talent , find jobs etc.

State level schemes (West Bengal)

Kanyashree –

Kanyashree praklpa or scheme was introduced for increasing enrollment ratio of girls between the age 13 and 18 years.

Sabujsathi –

Sabujsathi schme is to give bicycles to the girl children specially to the village girls. 29% village girls who have travelled more than 5 kms to go to school,they are under the scheme. This scheme helps those students.

Self help groups –

There are so many self help groups for women. Where they can do work as per their choice and potentiality. They can become independent by working on this self help group.

Present scenario of women empowerment after covid 19

Comparing to another nations, India's literacy growth has increased significantly in the last ten years. Covid 19 has been played the role of speed breaker in this. As per National Family Health Survey and National Statistical Family report (2021 and 2022) the literacy rate is 77.70% with literate male 84.70% and 70.30% female. Women have way more to come in this literacy rate. A large number of women have lost their jobs in this pandemic situation. Specially those women who were engaged in informal jobs like road labor or daily labors in different industries. Different reports indicate that 9 out of 10 informal women workers experiencing mental stress due to the uncertainty of their works. Moreover they had to face sexual harassment in their workplace. Most of them remain unpaid at this time. Their physical and mental health got disturbed in this entire pandemic situation.

Measures that can be taken by Government:

To cope up with this situation and to develop normal situation the researcher proposes the following measures that can be adopted by the government -

1. It is very important to ensure the services for all the victims of domestic violence. Give them shelter, provide them necessary supports.

2. Give them health insurance support who cannot get back to work for taking care to the children and elderly people at home.

3. Those women who worked in informal job sector, government should ensure their payments and make effort for more quality outcomes.

4. Government should have bring women's voice in the front foot. In various decision making at local, municipal or national level.

5. It is important to bring awareness in women about gender equality and importance of women empowerment. Government can play a large role in this. government can arrange awareness programmes about gender equality and gender stereotyping. It will help many women.

Education as a vital parameter for empowering women after covid 19

"when girls are educated, their countries become stronger and more prosperous" - Michelle Obama.

To empower a women, education is the most vital system. It helps to reduce social illness like –early marriage, dowry system etc. an educated woman is aware about her rights and make sure to protect that. Education make women economically independent and make them capable to choose her decision.

Even after covid 19, it become much more important than previous situation. Not only formal education, non-formal education are also very important nowadays. Skill development of women are very important to empower them. Vocational training, handicraft training, skill development for rural women are also very important field to explore. This type of training make them independent and from this they can contribute in the society. Quality training will help them to lead better livelihood.

1. Education motivates women in their life.
2. Education ensures job opportunity and financial independency of women.
3. Education helps to develop personality of a women in a society.
4. Education ensures women rights in society.
5. Education gives the power to women to place their opinion in society.

Benefit of women empowerment after covid 19

There are so many benefits of women empowerment, specially after covid 19. It will help in –

1. Economic development – if we can empower a women, the economic position of our society will increase. As we know that how was the situation of our economy got effected by covid 19.
2. Abolish social illness – we know that child marriage, sexual abuse of women got increased in covid time. If we want to better that situation it is important to make our women empowered in our society.
3. Provide equality in every aspect – if we want to provide equality, we have to empower our women. We have to listen their thoughts, their opinion.
4. Progressive society – it will help in to build progressive society. Make women independent to live their live to the fullest.
5. Build protection for women – an empowered women can build her security by own. No can exploit them or harass them.

Conclusion –

Women empowerment is an important issue in our society. It is one of the remedies for all social illness and social inequality. The only way to make a women empowered is education. "If we educate a woman, you educate a nation". – Bringham young. Through education, not only we can make financial

independence but also make awareness about women rights. They can become emotionally and mentally empowered too. Therefore after Covid 19 it is necessary to bring women back into the front foot. Make them feel important and give them chance to convey their opinion in every matter of life.

References

1. Mahato Anuradha and Dr. Barman Pranab, (2020), Women Education and Empowerment in India, Empyreal publishing house.

2. Dr R Uma Devi, (2019), Scenario of women education and women empowerment in India, JETIR, volume 6.

3. Dr. Meera K.P and M.K. Jumma, (2015), Empowering women through Education, International journal of humanities and social science invention, volume 4.

4. Yadav Archana and Dr. M.L. Sharma,(2021), Role of Education in women empowerment and development: challenges and impact, International journal of advanced research in commerce, management and social science.

5. Singh Khusboo, (2016), Importance of education in empowerment of women in India, motherhood international journal of multidisciplinary research and development, volume 1.

6. Bhat Ahmad Rouf, (2015), Role of education in the empowerment of women in India, Journal of education and practice, volume 6.

7. Pachaiyappan.P, (2014), Education: a tool for empowerment of women, Journal of education and practice, volume 5.

8. Channawar Sonali, (2016), Role of Education in Women Empowerment, International journal of recent trends in engineering and research, November.

TEACHER EDUCATION PRACTICES IN INDIA: A STUDY

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ABSTRACT

Teacher education system is an important vehicle to improve the quality of school education. The revitalization and strengthening of the teacher education system is a powerful means for the upliftment of educational standards in the country. There are many issues that need urgent attention for improving the quality of teacher education programme. One of them is the need of innovations in teacher education programme. Innovativeness means the ability to think beyond the boundaries and create something which is different from that which already exists. Without innovations, no progress is possible. Teachers have to be innovative and their grooming has to start from their training institutions. Innovations in teacher education include IT literacy, interactive teleconferencing etc. NPE (1986) stated "The existing system of teacher education needs to be overhauled or revamped." Unfortunately, the secondary teacher education institutions in India are stated to be largely not innovative. There are some resisting factors in our education system which prevents the teacher education institution from being innovative such as lack of physical facilities and funds, lack of diffusion of innovations among teacher educators, rigid framework, lack of research orientation etc. In this paper the authors have tried to throw light on the need of innovations required in teacher education, the resisting factors and have also given suggestions to overcome those factors.

Keywords: Teacher Education, Innovation, resisting factors

Introduction

The quality of a nation depends upon the quality of its citizens. The quality of the citizens depends upon the quality of education system and the quality of education depends upon the combined efforts planners, educationists and administration, however, the most significant factor is the quality of the teachers. It means excellent and efficient teachers can change the fate of the nation. A teacher helps a child in bringing out the hidden capabilities. He/she unfolds what is within, hidden and untapped. He/she makes explicit what is implicit in the students. So teachers' importance in teaching-learning process is very much. The Secondary Education Commission (1952-1953) report stated, **"We are convinced that the most important factor in the contemplated educational reconstruction is the teacher, his personal qualities, his educational qualifications, his professional training and the place that he occupies in the community."** It is very right that, **"no people can rise above the level of its teachers."(NPE, 1986).**The Teacher is the real and dynamic force of any institution. A UNESCO publication, *The Changing Role of the Teacher,* states: 'There was a time when the teacher's role was to pass down to the younger generation the knowledge, experiences and mythology of a slowly evolving society. The pace of change in contemporary society has made this role redundant. The modern teacher must be, among other things, a change-agent. It does not matter whether one is addressing the situation in a developing country or an industrialized nation, the problem remains the same. How teachers can be prepared to take up these new roles and perform teaching effectively to meet the challenges and expectations from education reforms is crucial to the reform and practice of teacher education and professional development (Cheng, Chow & Mok, 2004).

Initiative steps of Innovation in Teacher Education System:

NPE (1986) states "The existing system of teacher education needs to be overhauled or revamped." This has resulted in a number of initiatives being launched and they are-

➢ Establishment of NCTE by the government of India on August 17, 1995 as a statutory body responsible for the regulatory as well as professional aspects of teacher education.

➢ Programme of Mass Orientation of School teachers (PMOST) was launched as a centrally sponsored scheme in all the states and Union Territories during 1986-1990.

➢ Special Orientation Programme for Primary Teachers (SOPT) was taken up in 1993-94 to provide orientation to primary school teachers.

➢ In the light of recommendations of NPE 1986, Block and Cluster Resource Centers were established for professional growth of elementary school teachers and heads.

➢ Interactive teleconferencing has been successfully tried in Karnataka and Madhya Pradesh in in-service training course.

➢ Three National Curriculum frameworks on Teacher Education have been brought out by the National council of Teacher Education (1978, 1988, and 1998).

Innovative Programs in Teacher Education

➢ B.C Ed. (1989) by DAVV, Indore

➢ M.C.Ed. (1991) by DAVV, Indore

➢ Master of Educational Technology (Computer Applications) by SNDT, University, Mumbai

➢ M. Tech. (Educational Technology) by Kurekshetra University, Kurekshetra

➢ B.Sc. in Teaching Technology by Sikkim Manipal University

➢ HSTP Training Teachers, Eklavya, MP(1982)

➢ Activity Based Teacher Education Program, DAVV, Indore (1991)

➢ Personalized Teacher Education Program, Lucknow University, Lucknow (1996)

➢ Comprehensive Teacher Education Program, Gandhi Shikshan Bhavan College of Education, Mumbai University, Mumbai (2000)

➢ Four Year Integrated Program of Teacher Education, Kurekshetra University, Kurekshetra (1955)

➢ Four Year Integrated Program of Teacher Education, RIE, NCERT(1963)

➢ B.Ed. (Educational Technology) , AEC Teacher Training College, Pachmadi, MP

FEATURES OF SOME OF THE INNOVATIVE PROGRAMS

1. Personalized Teacher Education (DAVV, 1991)

Activity based Teacher Education Program (Zero Lecture Program) originated

and institutionalized at the School of Education, DAVV, Indore (1991) was deployed at Lucknow (1996). Some of the features of this Program are:

- Choice of Volunteers
- Learner Centered
- Personalized Classroom Setting
- Participatory Approach
- No lectures by Teacher Educators (ZLP)
- Freedom for what to study, how to study, where to study, and when to study Peer Teaching-Learning- Evaluation

2. *Holistic Teacher Education (CASE, 2008) Problem solving in higher education through participatory approach (DAVV, 1992)*

The Centre for Advanced Studies in Education (CASE), Vadodara has been strengthening Holistic Teacher Education through seminars, research and publications. A Research Study has been conducted on rehabilitation of Street Children through Holistic Approach. Some Research Studies are being conducted on Holistic Science Education Program and Holistic Development through Leisure Time Activities. The holistic teacher education program is quite promising. Some of the features of the program are:

- Subject Knowledge
- Inter-disciplinary
- Environmental Attitude
- Health development
- Emotional development
- Spiritual development
- Integrated development

3. *Problem solving in higher education through participatory approach (DAVV, 1992)*

The M.C.Ed. Class (1992), DAVV, Indore was very often given a problem to be solved through a computer program. Number of different programme would emerge from the entire class. Each program was presented by one of the programmers to the rest of the class and rated by all the students on different criteria, namely, compactness of source code, fetch and execute cycle size, response time, memory used, programming discipline level and programme intelligibility. Also, the students developed programme to calculate Kendell's

Coefficient of Concordance through 'C'language. They then computed Kendell's coefficient of concordance individual criterion wise and with respect to the comprehensive criteria. There is a significant cognitive development through cognitively mapping the algorithms and solution to a problem.

4. *Development of Creative Writing Ability Amongst Students Through Participatory Approach (CASE, 2010)*

   ➤ Recitation of Model Poems by the Teacher in Class situation

   ➤ Appreciation of the poem by the class and identification of the various components of creative composition

   ➤ Composition of a variety of poems by the students individually, and in groups Recitation of the self- composed poems by the classmates and appreciation by rest of the class

   ➤ Participatory approach of creative writing facilitates expression of the latent creative faculties in terms of original production.

5. *The Indian Institution of Teacher Education, Gujarat (Bill, 2010)*

This is a Bill to establish the Institute of Teacher Education to promote teachers' development of integral personality, wide vision of nationalism and internationalism and to fulfill their role as exemplars, as friends, philosophers and guides, as scientists, psychologists, artists and technologists and above all as ideal communicators who can spread uplifting influence by the processes of awakening, inspiration, and enthusiasm, also to new trends of syntheses of the East and the West and agents of change from old to the new and to confer the status of a University thereon and for matters connected therewith or incidental there to.

Resisting Factors in Innovation:

Although there are so many innovative practices existing in Teacher Education Programme in India, but still there are some resisting factors in our education system which prevents the teacher education institution from being innovative and they are-

1. *Lack of Physical facilities and Funds* - Majority of colleges suffer from lack of facilities in terms of space, equipment and personnel. Consequently, they have not been able to adopt innovations. For want of these facilities, many creative ideas are shelved.

2. *Lack of Diffusion of Innovations among teacher educators* - Most of the teacher education institutions is poor and indifferent towards the

professional growth of their teacher educators. Many of the teacher educators are ignorant of the new trends in their area of studies due to lack of diffusion of new ideas among them.

3. **Lack of Service -** Due to administrative difficulties, teacher educators are not able to try, adopt and maintain innovations in teacher education institution. For any new experimentation, facilities are not usually provided by the administrators.

4. **Lack of Support -** It is unfortunate that teacher educators have not been able to adopt innovations due to noncooperation of practicing schools. The schools are not always willing to extend their facilities to the

   teacher educators for trying out new ideas because they do not want any disturbances in their daily routine.

5. **Rigid framework** - It is found that the rigid system of syllabus framing and theory respectively are responsible for the continuance of the traditional practices in teacher education Programme. The present examination system under a rigid framework is a biog stumbling block in the process of innovation.

Suggestions-

The above observations clearly indicate that teacher education programme at secondary level needs to be examined critically in terms of its innovativeness. Here are some suggestions which can be used to overcome these problems-

❖ Identification of the innovative research could be done if all the Departments of Education Countrywide contribute in this area. They may periodically produce the Research Abstracts of the Studies conducted in their respective Departments, which may be made available on the World Wide Web.

❖ Every Teacher Educator may be given Unique Identification Number. It will facilitate Manpower Planning in Teacher Education.

❖ There should be networking amongst all the Teacher Education Institutions to learn from the innovative practices of each other.

❖ It is imperative to strengthen Vocational Teacher Education in almost all the domains of Vocational Education, such as, agriculture, horticulture, sericulture, servicing of the electric and electronic appliances. Innovative approaches need to be evolved.

❖ Physical facilities and funds should be adequately provided to the institutions by the government, local bodies and organizations.

Conclusion

To meet the challenges of the new millennium, teacher education in India needs a tremendous change. The teacher educators need intensive training in various aspects related to new innovations. The above stated problems are challenging and strategies to overcome these problems are the need of the hour. Therefore NCTE, SCERT/SIE and university department of education should take immediate action for making education system innovative. There is nothing to get disheartened. Indian Education is a state of flux. Attempts are being made for enhancement of professional competencies of teachers through ICT mediated Constructivist Approach. India is committed to compatible education for all, which is being realized through the various dedicated programs, essentially innovative in nature.

References:

- Boles, K., & Troven, V. (1996). Teacher leaders and power: Achieving school reform from the classroom. In G. Moller & M. Katzenmeyer (Eds.), *Every teacher as a leader, new directions for school leadership, No. 1*. San Francisco: Jossey-Bass.

- Cheng, Y. C. (2005). *A new paradigm for re-engineering education: Globalization, localization and individualization*. Dordrecht, The Netherlands: Springer.

- Cheng, Y. C., Chow, K. W., & Mok, M. M. C. (Eds.). (2004). *Reform of teacher education in Asia-Pacific in the new millennium: Trends and challenges* (pp. 1–238). Dordrecht, The Netherlands: Kluwer Academic Publishers.

- Das, B.C.(2011).What prevents Teacher Education Institutions from being Innovative,Edutracks,Vol.10 (6), p.15-18

- D.R. Goel and Chhaya Goel(2010), Innovations in teacher education, *Journal of Engineering, Science and Management Education, Vol. 1, 2010,pp.24-28*

Role of teacher's obligations and duties to attention deficit hyperactivity disorder (ADHD) students in school

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ABSTRACT

A child with ADHD has discrepancies in activity and betterment of brain that effected child's cognitional process like attention, thought etc. Their IQ (Intelligence quotient) is less than 7-15 points than average IQ. They often incapable to follow commands or instructions. They have many problems such as social problem, adjustment problem, study related problem, etc. Because of their inattentiveness, impulsiveness and over activeness. If the treatments and steps are not taken properly, then their behaviour will gradually converted into conductive disorder.

"The role of the teacher's obligations and duties to attention deficit hyperactivity disorder students in school" this paper will effort to discuss, about how a teacher can assist ADHD students to overcome their problems.

Keywords: executive dysfunction, congruity, schedule, dhyana, self-realisation

Introduction: teaching is a one kind of vow and the work that is done by teachers. The improvement of any nation depends on the educated people of that country. An ideal teacher can eliminates the lack of knowledge of students by his/her knowledge. He performed his/her obligations and duties by own knowledges as well as experiences and also help students to acquire knowledge and get success.

Jakir Hossain pronounced about teachers that, "the teacher is indeed the architect of our future." That's why we can enounce a revealed truth, teacher is manufacturer to build country. Students are influenced by the teacher's behaviour. So teacher plays an exigent role in society. Students' overall development of cognitive affective and psychomotor are depends on presence of

teacher in the field of education. teachers are given the highest status in indian society. NCTE is known as Apex body of teacher training agency. It was installed under NCTE act 1993 in 1995 by government of India (GOI). It's aim is to create a lot of teachers, who will introduce different cultures towards students in school, will bring up their hidden talent and shapes them as a good citizen. Teacher restlessly helms the boat of Education. S/he incessantly strives to help the students to grasp their crucial problems, to face their matters along confidence, skill as well as creative thinking.

ADHD: ADHD is a cognitional disease, that attacks on an average 2-7 percentage of children internationally. A study entitled "prevalence of attention deficit hyperactive disorder in primary school children" organized in Coimbatore discovered ADHD prevalence in India is higher than the global estimate at 11.32% in children, in India. perception, memory, reasoning, thought, attention, evaluation, judgement, problem solving, etc. all are unitedly known as cognition. When these components of cognition are performed in organized way only then a person can sustain Equilibrium himself. If the **cognition process** does not function properly then executive dysfunction occurs in a person. As a result, emotional dysfunction strongly affects the individual. Emotional dysfunction brings behavioural problems and it also affects on individual or student's interaction and atmosphere. Attention deficit hyperactive disorder gradually arise in children. Symptoms of ADHD generally enlarge with age, it can not be diagnosed properly in childhood. Neither they have less intelligence nor they don't have the ability to succeed. They can't sit still in one place for long. This type of abnormality was prior called hyper kinesis. Hyper and kinesis refers to over and motion respectively.

Types of ADHD: there are 3 types of ADHD

- **Inattentive**
- **Hyperactive hyper impulsive**
- **Combined hyperactive hyper impulsive inattentive**

Predominantly Inattentive- students with predominantly Inattentive makes unconcern mistakes whereas they don't have ability to continue their attention. For example - while you were reading your consideration should be on a book but you were puzzled by fairyland.

Symptoms (according to DSM-5 & DSM-5-TR)

- They get bored very quickly

- Can't paying attention when teacher speaking

- It is very difficult to do something with organized way

- Losing something

- Difficult to concentrate

- Make often mistakes in homework

- Unable to complete activities on time etc.

Predominantly hyperactive hyper impulsive- This kind of students are make mistakes while doing any work and makes judgement without thinking. Hyperactive hyper impulsive is Apprehend in boys more than girls.

Symptoms (according to DSM-5 & DSM-5-TR)

- Frequently they feel difficult to sit or stand during class, prayer etc.

- They talk a lot of unexpected things

- Using someone else's stuff without consent

- They start talking before other has finished.

- To much obstinate

- To much emotive etc.

Combined hyperactive hyper impulsive inattentive- hyper impulsive and Inattentive these two kinds of symptoms are present here, if **six symptoms** are display in students out of either of the first two types or a combination, all those students then to be classified as this type of ADHD.

Causes of ADHD-

Heredity, scientist are till now searching for the cause of ADHD. Most of them believe that genetic factors are the cause of ADHD. Study says that those who are oppressed in ADHD about 25% of their ancestors had this problem. Environmental, sometimes environmental factors are might act in causing ADHD.

- Having alcohol during pregnancy

- Smoking during pregnancy

- In case infants are come in contact with specific metal, such as lead.

- All are these mm may be act environmental hazard.

Besides these,

- watching to much television

- If child got any brain injury during infancy
- Premature delivery
- Bellow birth weight etc.

Teacher's duties and obligations -

In school, students who are inattentive, hyperactive and impulsive their are identified and classified in ADHD. These students are not equal to ordinary students. That's why general teaching method can not be adopted for them. Teaching method, strategy techniques overall the teacher's selected way will be specialized. In many cases, children with ADHD they withdraw themself from social activities due to lack of suitable environment. it is also seen in field of education. Inappropriate teaching-learning environmental and lack of skillful teachers, children are being separated from the mainstream of education. So if these children with ADHD are not retained in mainstream of education then our dream **article 45** will not comes true. ADHD symptoms are developed slowly. Childhood's symptoms are more pronounced in adolescence. So it is very important to identify them, and follow the planned method. In this case we can't forget the role of the teacher.

Duties - Duty refers to a one's moral action. Spontaneity are viewable here. Sometimes by law many duties are Originate.

Use of board:- A teacher helps his/her students to remain concentrated. Sometime in class teacher put forward **placards** to grip attention from students. During explanation teacher can highlight the words, answers or important phenomenon etc. in board. Also can used Smart board. By these teacher will be able to take the students a **virtual tour** without leaving the class room. It plays a very important role on students to attract their attention.

Establish rules:- reject those works that will be too difficult for students with ADHD. This includes- home work, assignment, class test, class work, other school activities etc. Depending on the scientific and situational perspective, teacher will arrange their seat in the class room. For keep balance class room's environment.

- Teacher will never let them allow to sit together. Teacher should arrange their seat away from grievances like gateway or windows
- Granting more pauses during class time.
- They are very restless by nature, so teacher should instruct them to do some works such as wipe the board, collect homeworks from students, etc.

Play way method:- children find their own existence through playing. Congruity means when individual can bring around their real self with ideal self. Students get their first lesson about congruity by playing. They also can enhance their three kind of 'domains of learning'

As like,

> **Cognitive domain (by thinking)**
>
> **Affective domain (by feeling)**
>
> **Psychomotor domain (by doing)**

Some games might be conducted in school by teacher-

1) Story based games
2) Chinese checkers
3) Drum beats
4) Chess
5) Work with song
6) Rubik's cube etc. are very helpful for draw attention, control emotions as well as reduce hyper activity.

Concrete knowledge:- there are two types of knowledge. One is concrete knowledge and the other is abstract knowledge. For ADHD students, teacher has to impart concrete knowledge to build tangible concept. Therefore teacher's adopted way will be inductive method. Like -

- Showing something (picture, model, chart, etc.)
- Simple to complex
- Familiar to unfamiliar etc.

Co-curriculum activities:- the term extra curriculum activity was replaced by co-curriculim. Classroom curriculum enhances intelectual ability of students, but co-curriculum activities help students into overall (social, emotional, ethical, mental, physical, etc.) developed. With ADHD students are very restless, emotive, Inattentive.

- National service scheme (**NSS**), National cadet corps (**NCC**), National police cadet corps (**NPCC**), Drama, Music etc are help students become disciplined and attentive.
- Art, painting these activities support pupils effectively for control their emotions as well as help them to expose hidden creativity.

Teacher should encourage pupils, so that gradually they will be able to participate in those activities.

Reward for prosperous attitude:- reward are used to motivate, it increases feasibility of a response. Reward acts as reinforcement. In this context, Behaviourist Skinner's schedule can be mentioned. There are 4 types of schedule

➢ Interval schedule

➢ Ratio schedule

➢ Fixed interval schedule

➢ Fixed ratio schedule

Which will be used by class teachers as required in class during teaching.

Meditation:- It is also called dhyana. Basically meditation means focusing one's mind on particular thing or object. Like **candle flame, crystal, mirror** etc. We can't neglect the importance of meditation to school students especially ADHD children. Because meditation reduce concern, anxiety, despondency. Melancholy. It plays a serious figure to increase consistency, unity, patience, harmony in body and mind of individual.

Counseling:- to support set up a suitable learning Circumstance and help pupils with ADHD, teacher can plays as counselor's role or school may provide counsel to students by experts. Positive counseling is like a mirror. By this, students can know about their holding position. To build positive mindset and emotional development in students, counselor can adopt appropriate methods in school which help them (students) directly or indirectly. Counseling helps in building self-realisation, social Efficiency, make decisions etc.

Follow up:- follow up is an another important duty of teachers for ADHD students. The teacher can keep in touch with his/her students. It helps to gather informations about the students after certain period of time. If there is no changes in behaviour of student then teacher or institution can borrow some therapy like

• Behavioural therapy

• Dialectical behaviour therapy

• Rational-emotive therapy

• Art therapy etc.

Obligations- obligation means legal responsibility. In obligation, voluntarity is essential. Based on this perspective obligations of teachers can be separated into 3 parts

- Obligation towards his/her students
- Obligation towards parents
- Obligation towards society

- **Obligation towards his/her students:-**

    1) A teacher should be fair-minded. Never should go through any bias, neither ADHD students with normal students nor between ADHD students. S/he must deal all the students equally.

    2) they (students) can become demotivated easily after get unsuccessful of any task or may be due to poor grades. In addition naturally they are extremely impulsive and very often get emotionally restless. Make sure to encourage, enlighten console and motivate them with positive manner.

    3) To help students with ADHD in making decisions is an essential responsibility of a teacher. Only then gradually they will be able to take decisions logically based on situation, teacher guides them in making decisions.

- **Obligation towards parents:-**

    1) parents mostly unaware how a child behaves and represents in class. So teacher should impart the parents about their studies, performance, activities, confused behaviour, ordinary behaviour etc.

    2) What strategies would be adopted? How they are behaves in familiar environment and unfamiliar environment? How much they have improved?

To know all of these, teacher should arrange meeting with parents periodically.

- **Obligation towards society:-**

    1) Teacher should make everyone aware that students with ADHD also is a part of our society. They are not profane. They need help and proper monitoring.

    2) They need to be informed about their social dignity, social values and fundamental rights.

    3) Their participation in school activities, functions, exhibitions should be ensured.

4) To establish equilibrium between society and school as well as to develop humanity.

Conclusion:- A child might be unstable, enthusiastic, impatient, neglectful, emotive etc. Inattentive, hyperactive, impulsive these three symptoms are basic characteristics of ADHD, but we can not include a child in ADHD by seeing these features. Because those are the inborn characteristics of human being. If those features are seen for a long time in child's behaviour Only then we can classified them into ADHD. As an ideal teacher, his/her duty is realise the special needs of ADHD students and create a friendly teaching-learning environmental for them, So that their overall development can occur.

References:-

https://en.m.wikipedia.org/wiki/Attention_deficit_hyperactivity_disorder_predo minantly_inattentive

https://kidshealth.org/en/parents/adhd.html

https://www.google.com/amp/s/www.mentalup.co/amp/blog/attention-games-for-adhd

https://my.clevelandclinic.org/health/diseases/4784-attention-deficithyperactivity-disorder-adhd

Carr, A. (2001). Abnormal psychology. Psychology press.

Butcher, J.N., Hooley, J.M., Nimeka, S. (2013). Abnormal psychology. Pearson.

Muscari, M. (2016). Child behavioral and parenting challenges for advanced practice nurses. New york: springer publishing company.

NATURE IN THE POETRY OF SAROJINI NAIDU

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ABSTRACT

Sarojini Naidu, a poetess with perfect knowledge of English language gained the spectacular success as the nightingale of India. She was a successful poet of early twentieth century along with being a true patriot. Sarojini Naidu looked into the locations, sounds, colours, quality and moods of nature remarkably and incredibly. She was a versatile poet and had written her poetry on different themes. Her poems project different themes like love, folk life, challenges of life and death, nature, Indian customs and traditions, but she was always inclined towards nature, specially towards spring season. The poet was particularly enticed and mesmerized by the bliss and astonishing gifts of springs. In spite of the short tenure of her artistry she had lyrical elegance, exquisite passion and enchanting melody in her poetry.Her major works The Golden Threshold, The Bird of Time and The Broken Wing overflow with many wonderful and picturesque beauty of Indian natural landscape.

Keywords: Nature, Spring Season, Indian Birds, Flowers, Romanticism

Introduction

"And Hark! How blithe the throstle sings! He, two, is no mean preacher: Come forth into the light of things, Let Nature be your teacher." ...

William Wordsworth

The relationship between man and nature has been an intimate one ever since the beginning of life. In the primitive age, his aesthetic pleasures and physical needs were gratified by nature. He must have appreciated the snow-clad mountains and sweet carols of various birds and must have dipped into sparkling streams and basked under the Sun.

In the Vedic age, nature was raised to the status of a deity. All elements of nature like Sky, Fire, Air, Water and Earth were worshipped as the divine powers. The Sun was prayed for repelling all evil forces and for absolving one's sins.

It was in the nineteenth century, where it was English poetry, which influenced Indian English nature poetry, the most. William Wordsworth's Pantheism, P.B. Shelley's Mythopoetic Imagination, John Keat's Sensuousness and St.Coleridge's heuristic vision influenced the Indian poet to a great extent. They began to interpret nature in terms of mankind. The Victorians and the Pre-Raphaelites augmented the process of re-orientation. English romanticism paved a new creative ground for Indian poets. They found their critical inspiration in nature. The rich Indian landscape, radiant flowers and their colours, the murmuring rivers, the snowy mountains and the melodious songs of birds caught the imagination of Indian English poets who looked at nature with a new vision.

The scenery of nature is used only to illumine their inner world, and they seem to be emanating out of their own native tradition. Sarojini Naidu unlike Rabindranath Tagore and Sri Aurobindo show any constituent view of the world in which the role of man and nature in the cosmic scheme may be defined. Their poetry is based on a philosophy, which presents God, Man and Nature in their integral relationships. Sarojini Naidu's conception of nature lacks philosophical foundation but her poems reveal a spontaneous understanding of the Indian point of view.

Though she has written poems on religion, country, women's freedom, etc. her poems on nature occupy the first place in her poetry. Even in sorrow, her nature poems glow with a touch of her suffering.

Sarojini Naidu (1879-1949) was one of Mother India's most gifted children readily sharing her burden of pain, fiercely articulating her agonies and hopes and gallantly striving to redeem the Mother and redeem the time. Her poetry is pictorial and melodious. She is rightly called 'The Nightingale of India.' She describes typical Indian scenes in her poetry. Her lyrics are full of magic and melody. Thoughts of love, nature and death form the themes of her many poems. The three volumes of her poems 'The Golden Threshold,' 'The Bird of Time', and 'The Broken Wing' published between 1905 and 1920 testify her splendid poetic achievement. The falicity and charm of Sarojini Naidu's lyrics make her the rightful heir to Toru Dutt, whom she has recalled as a lyrical poet. Dr. Naik observes: Inspite of the strong romantic Century poetic diction, Sarojini Naidu speaks of bangles as 'rainbow-tinted circles. 'Kashi Prasad Ghose describes the

Moon as 'irradiated gem of night' in the last volume published in 1917.Till the end, she continued to sing like the song-bird, the Nightingale.

Sarojini Naidu is one of the illustrious poetesses of Indo-Anglian poetry. Her songs are in great tradition of Indian devotional literature, the literature which successfully and beautifully illustrates and explores the vedantic and Upanishadic philosophy of love, truth, peace, God, immortality of the Supreme soul, religious faith, self-realization soul, etc. But what makes her poetry charming and lively is her lyrical wealth, her spontaneous overflow of her emotions steeped in Indian, ethos and culture, the vividness of imagery, her simplicity of expression, her passionate desire for beauty, music and melody, and above all, the thrilling, imagistic-and rhythmic language.   H.M.Prasad rightly holds the view:

"Sarojini Naidu writes instant poetry where images and metaphors come rolling ready on the hotplates of imagination: Her poetry is intensely emotional, at times passionate to the point of eroticism and always has a spring-like lyricism." [1]

Sarojini Naidu was a great poetess of Indian writing in English. She started her poetic career at a very tender age. Her poetry is not of a particular theme but of multiple themes. One of the major themes of her poetry is the Indianness or portrayal of Indian life in her poetry. While in England it was Edmund Gosse who had advised her to cultivate Indianness.

Sarojini Naidu throws light on the development of her poetic career and patriotism. Like Rabindranath Tagore and Sri Aurobindo, Sarojini Naidu, too, was more than a poet. It was as an English poet that Sarojini Naidu first caught the attention of the public, but that was only the beginning. In course of time the patriot exceeded the poet and Sarojini Naidu came to occupy some of the highest unofficial and official positions in the public life of India.

She was called as Bharat Kokila(the Nightingale of India) on account of her beautiful poems and songs. Sarojini Naidu's poems are deliberately meant to be heard rather than to read or to study. She is primarily considered as a lyric poet with the distinct feature of melody. In her poems sound and sense combine to produce an emotion like in music. She is a versatile poet, drawing the rich traditions of several Indian languages, religions, regions in her works. Her major themes are love, common life of Indian people, beauty of Indian scenes and sights, Indian traditions, philosophy of life and patriotic sentiments of Indians. She is primarily considered to be a love poet, and her love poetry explores the various aspects of love, such as love in union, love in separation, the pains of

love, earthly love, sins of love, divine love, etc. Sarojini Naidu's images are stylized sophisticated. The fusion of personal emotions through Indian ethos, in a lyrical manner with vividness of imagery is major feature of her poetry.

'The Nightingale of India' has achieved spectacular success as a poetess and as a patriot. As a luminous star in the sky of Indo-Anglian literature, she scattered the light of her poetic achievement in the international sphere. She enjoyed the privilege of having a good number of wise friends and celebrated acquaintances, who quickly recognized her poetic talent and introduced her to literary circles of the west.

Her very first poem is the product of her potentiality ability of a poet that is already in her. She started her early writing when she was in England. There she was in love with the young Dr. Govinda Naidu and the poems she wrote till her marriage. With him in 1898.The poems she wrote were all love-poems, in different moods and tones. The scenery and sights of England countryside, of flowers the birds in particular. This was the sign of the romantic nature of England Literature poets like John Keats, P.B.Shelley , William Wordsworth.

Sarojini wrote her first published poem. The Song of a Dream as a college girl at Cambridge. Subsequently, she published a series of poems exhibiting a mixture of romanticism and idealism in the manner of Keats and Tennyson. The early poems show a strain of melancholy born out of loneliness, a combination of fantasy and delight and an unbelievable command over words, phrases, rhythm and rhyme- traits which would be developed to perfection in her later poems.

The English critics, Edmund Gosse and Arthur Symons, were struck by the charm of Sarojini's poems. They noted her passionate delight in the beauty of the sounds and words. However, they advised her not to be skylarks and nightingales. She was told to stir the soul of the East to reveal the heart of India to the westerners. Edmund Gosse asked her to set her poems firmly among the mountains, the gardens, the temples, to introduce to us the vivid population of her own and unfamiliar province, in other words, to be a genuine Indian poet of the Deccan, not a clever machine-made imitator of English classics.

After her return to India, Sarojini decided to confine herself to Indian themes. The next twenty years of her life was dedicated to writing poetry, fulfilling an ardent mission of introducing the exotic oriental world of beauty and mystery to the English speaking world.

Though several of her themes are light and ephemeral, Sarojini's poetry is intensely Indian. She has poetized the sights and sounds, situations and experiences familiar to us. Though she reached the peaks of excellence only rarely, for sheer variety of themes, range of even today feelings, colour, rhythm, fancy and conceit, metaphor and similies Sarojini remains unsurpassed even today.

In 1905, her first collection of poems, The Golden Threshold was published. Subsequently, she published The Bird of Time, The Broken Wings, The Magic Trees, The Wizard Mask and A Treasury of Poems.

Gandhi whom she addresses as a 'Mystic Loyus' in her famous sonnet, was to transform her from a romantic singer of life's beautiful ephemeralities to a determined and impassioned fighter for her country's liberation. Ten years younger to the Mahatma and ten years elder to Jawaharlal Nehru, Sarojini entered the vortex of the freedom struggle immediately after the publication of her last collection of poems The Broken Wing in 1917.

Sarojini has written a variety of poems. Her poems are available in four volumes-The Golden Threshold(1950),The Bird of Time(1912),The Broken Wing(1917) and The Feather of Dawn(1961).The name of Sarojini' bungalow in the city of Hyderabad is "The Golden Threshold."

Sarojini Naidu's nature poetry rests on a less ambitious plane. The impression of novelty and freshness her poems created on their appearance was pronouncedly due to the new romantic sensibility. In fact, in her treatment of nature, she stands in a closer and more direct relationship than others to both the English Romantics and the Hindu-Sufi Mystics. Her attitude towards Nature is not muscular but meditative. She describes the scenery and spectacles of the natural world with a sense of primal wonder and joy, combined with pensive reverie and melancholy. Even her adjectival excess and hyperbolic ornateness catch the essence of the magical spell cast by nature. The individual consciousness responds to the enriching experience of beauty, harmony and meaning which permeate man's inaugural world. In describing a scene or mood of Nature, the poet imagines a situation in which the scene or mood is absent. She contrasts the presence and the absence, as though the substance and the shadow together constitute a single reality. Her lyrics thus assume a meditative sensitivity, and a strange brooding quality which draws the variant emotions of the lover into the patterns of Nature. The separation of the beloved from the joys and delights of Nature humanizes her own loneliness. The arrivals and departures of revenants,

arising from the crosslights of memory and fancy, trace a pattern of the inner life. Nature is bountiful which, for the poet, finds meaning and fulfillment only in the context of the human aspiration. Man may need Nature for his sustenance, but Nature too needs man as its instrument of self-expression. The pearl is nature self distilled and self-revealed.

Man, in Sarojini Naidu's Poetry, is constantly under the impact of nature in its varying and variegated moods, responding to its flux. Nature, in its human context and men in his natural context- These are the two themes integrated into a single unity in her poetry of all our early Indian poets of this century. Sarojini Naidu has beautifully recaptured the autochthonous response to natural environment.

Discussions/Conclusion:

In the end, we may say that she was a poetess not of today but of yesterday and tomorrow. Her poetic themes were not congenial poem they were elemental and eternal. She wrote little poetry but she remained a poetess. She was precluded by her preoccupation with the national struggle from pouring out her delicate songs about love and life and death. To the English reader, she is interesting, no doubt, as an interpreter of the East to the West.

Her genius was not as a roaring flame, it was a brilliant incandescence that dispelled the darkness with a warm and cherry luminosity. She once said "I sing just as the birds do, and my songs are equally ephemeral."

In conclusion, Sarojini Naidu's conception of nature is neither completely Wordsworthian nor exclusively classical Indian. For her, nature is a sacred, solitary retreat from the struggle and strife and conflicts of human life, a sinless Eden. It is a Mystic Brindaban as she describes in 'Summer Woods' where innocent lovers like 'Krishna and Radha' appear engrit with low voiced silences and gleaning solitudes and are ever encompassed with delight. It is a world of garden away from menacing human crowds, a place very safe for love. Nature is the external environment of Man, and the manifestation of beauty, harmony and continuity. It is a symbol of mysterious forces breaking into the emotional life of the individual as well as the race. It is a retreat from strife and conflict, encouraging solitary contemplation, and renewing man's connection with the world.

"Read nature; nature is a friend to truth." … Edward Young

References

Prasad, H.M.: Indian Poetry in English, Sterling Publishers Private Limited, New Delhi,1992,p.22

Naidu Sarojini, 'The Golden Threshold', William Heinemann, London, 1905, Print.

Naidu Sarojini, 'The Bird of Time', William Heinemann, London, 1912, Print.

Naidu Sarojini, 'The Broken Wing', William Heinemann, London, 1917, Print.

Samson George, 'The Concise Cambridge History of English Literature', C.U.P. 1945, P.914

Need, Significance and scope of Leadership for Learning in Schools in India

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ABSTRACT

Global research suggests that school leadership is receiving increased attention as an essential component in efforts to improve student learning. In the Indian education scenario, heightened policy attention on student learning has altered expectations on what school heads need to know and to practice, within the contexts of high stakes accountability, low autonomy, and challenges that include shortage of teachers, urban-rural gap and disadvantaged communities. The article attempts to provide conceptual clarity on the significance of leadership for learning in government schools in India, the constraints to leadership and the roles that school heads needs to perform in their schools to become leaders of learning and to ensure whole school transformation.

Key words: leaders of learning; Indian education; policy; government schools; vision, developing countries

Introduction

Economic globalization, with increased level of technological advancement and modernization has put pressure on countries to focus on the quality concerns of education. It has become increasingly critical to give the youth, the knowledge and skills that they need to thrive in the rapidly changing global ecosystem. Coincidentally, global education accountability movement, initiated around the turn of the millennium, re-wrote the purpose of education systems and established student achievement as the key criterion for assessing educational effectiveness and progress (Hallinger, Gumus & Bellibas, 2020, p-1630). As the countries approach Education for All (EFA) and the Millennium Development Goals (MDG) targets, these global level developments have led to a shift in

focus from school access and enrolment to quality enhancement. However, international surveys and studies including the EFA Global Monitoring Report, ASER and the World Development Report (2018) have raised concerns on the quality of education, especially in developing countries, highlighting that students are passing out of schools without acquiring the required cognitive skills. Low quality education equated to low learning levels has become a pervasive issue in developing countries. Systematic reviews of impact evaluation studies that have evolved in the last decade in developing countries have highlighted that interventions that work for improving learning in schools include pedagogical interventions (Conn, 2014); improved technology (McEwans, 2015); pedagogical reforms that match teaching to student learning levels (Kremer, Brannen, & Glennerster 2013); improved teacher knowledge, reducing teacher absenteeim (Glewee et al., 2004) and focus on availability of learning materials (Krishnaratne, White, & Carpenter, 2013). At the same time, and in a parallel development, the importance of school leadership and its influence on the education system for improving learning outcomes has gained currency in developing countries. In the search for new levers to improve quality of education and student learning, school leadership reform has emerged as a top priority among policy makers across the globe in the last two decades. Research has provided surplus evidence on the impact of school leadership on school organization, culture and conditions and through this on the quality of teaching and learning and student achievement (Gu& Johansson, 2013). According to Hallinger, Bellibas and Gumus (2020), instructional leadership has undoubtedly grown as a powerful model of school leadership guiding policy and practices in schools. In the Indian education front, the National Educational Policy (2020) has envisioned the role of school leaders as key agents to improve student learning and learning outcomes through facilitating and supporting the creation of meaningful learning opportunities in schools and classrooms. NEP2020 further calls for the need to support school heads to enable them to develop the knowledge, attitude and skills required for leading schools and to improve student learning, at the same time, stressing on the need for capacity building programmes on school leadership so that school heads become leaders of learning in their schools and are able to lead school transformation. Nevertheless school leadership development has been a challenge in India as well as other developing countries wherein school leaders' role has been traditionally administrative. This situation thereby engenders a need for preparation of school heads for the role of leaders of learning in order to improve

student learning outcomes. The present article discusses the need, significance and scope of leadership for learning in government schools in India.

Perspective on leadership for learning: a review of literature

Global research in the area of leadership for improving learning has developed several conceptual frameworks relating school leadership and student learning, under various themes such as 'instructional leadership' (Hallinger and Wang 2015), 'leadership for learning' (Hallinger 2009), 'leadership focused learning' (Knapp 2014), 'learning leadership' (Spillane 2013), 'pedagogical leadership' (González, 2021), etc although the term 'leadership for learning' is mostly used nowadays. Research evidence about the nature and effects of successful school leadership for student learning justifies two important claims primarily that leadership is second only to classroom instruction among all school related factors that contribute to what students learn at school. This evidence supports the present widespread interest in improving leadership as a key to the successful implementation of large-scale reform. Secondly the effect of leadership is more pronounced in schools that are in difficult circumstances. Most of the research studies regarding turn around schools categorically emphasize the intervention of a powerful leader (Leithwood, Louis, Anderson & Wahlstrom, 2004). Hallinger (2011) in a synthesis of the conceptualizations provided by leadership researchers on school leadership and student learning highlights three major points: that leadership is enacted within an organizational and environmental context. School leaders function in an 'open system' that includes the school community, the institutional system and also the social culture. Leadership is both shaped by and responds to the constraints and opportunities inherent in the school organization and its environment (Bossert et al., 1982; Leithwood et al., 2010; Mulford & Silins, 2009). Secondly, the exercise of leadership is moderated by the personal characteristics of the leaders which include their beliefs, personal values, knowledge and experience. Third, leadership does not directly influence student learning, rather, the impact is mediated by school level processes and conditions (Hallinger and Heck, 2011; Leithwood et al., 2010; Robinson et al., 2008). To the question of how leadership improves student learning by influencing school level conditions and process, the above conceptualization elaborates that school principals have a role in determining the *school values* and these values determine the principal's decisions regarding resource allocation, staffing, problem identification and resolution leading to improvement in student learning. The *personal values and beliefs* of the school principals in tandem with the school values is a requirement for leadership for learning. *Vision and goals*

are significant paths through which school leaders contribute to improved learning in classrooms. Vision and goals determines the direction in which the school seeks to move. *School culture, work processes and people* also act as mediating factors through which the impact of school leadership on student learning is achieved. Robinson et al., (2008) meta-analysis provides information on where the school leaders should put their focus in order to develop their schools capacity to produce a positive impact on student learning. The research revealed the leadership dimensions, functions and their impact on student learning. The leadership dimensions mentioned by the research study as significant are Establishing Goals and Expectations; Strategic Resourcing; Planning, Coordinating and Evaluating Teaching and the Curriculum; Promoting and taking part in Teacher Learning; and Ensuring an orderly and supportive environment. The study revealed that that the principal's support for and participation in the professional learning of staff produced the largest effect size on learning outcomes of students. This was followed by setting goals, expectations and planning, coordinating and evaluating teaching and the curriculum. The study by Day et al., (2010) claiming that successful school heads improve student outcomes further concretized the significant links between leadership and student learning outcomes. The study revealed that school heads' educational values, reflective strategies and leadership practices shape the internal processes and pedagogies resulting in improved pupil outcomes. While there has been several research studies confirming the link between school leadership and student learning, there are also studies that revealed the importance of school heads and their roles in bringing about school change. These studies further emphasized the need for empowering the school heads in order to bring about school transformation. According to Leithwood, Anderson and Wahlstrom (2004), school improvement requires effective teachers, strong principals and an engaging curriculum. The study revealed that while school leadership accounts for twenty five percent of impact on student learning, effective principals drive collective efficacy by bringing all the three elements together towards school improvement. The study revealed that Principals have the greatest effect when they receive support that allows them to drive meaningful change. Empowered principals create a culture focused on student and teacher success. They establish systems that enable teachers to continuously improve their practice and galvanize the whole community to support students' hopes and dreams. In summary, research reviews highlights that school leadership has an indirect impact on student learning and that there is

a need for professional development of school heads to make them leaders of learning so as to enable school transformation.

Leadership for learning: Indian education policy context

India has made great strides in improving access, enrolment and participation of children in schools, yet concerns on the quality front has remained. The Right to Education Act (RTE-2009) has ensured that every child has a right to quality education, which in turn has tremendously improved the access and enrolment of children in schools. Yet, on the quality front, there are children in schools who haven't mastered basic reading writing and arithmetic. The National Educational Policy (2020) has reiterated the need to reduce the gap in learning outcomes through undertaking major reforms that would usher in highest quality, equity and integrity into the education system. The policy document also renders an increasing realization that quality concerns can be addressed only through decentralized initiatives where local actors would play an active role in leading the schools. NEP-2020 has envisioned the role of school leaders as key agents who can improve student learning and learning outcomes through facilitating meaningful learning opportunities in schools and classrooms. The policy calls for the need to support school heads to enable them to develop the knowledge, attitude and skills required for leading schools and to improve student learning. Earlier, planning and policy documents such as NCSL-NIEPA (2014) also has reiterated the need for encouraging the role of local players namely school heads in initiating school transformation. Historically, national policies such as The National Policy on Education (NPE, 1986) have highlighted the role of school heads for school transformation. The policy has argued for providing greater autonomy within schools, and has identified school heads as key agents for improving the quality of education. The National Curriculum Framework for Teacher Education (NCFTE-2009) emphasised that school heads through providing opportunities to teachers for professional development strategies can ensure improvement in student learning. Unfortunately, in India, indigenous research studies on school leadership and its impact on school transformation and student learning is limited (Saini & Goswami, 2019; Saravanabhavan, Pushpanadham &Saravanabhavan, 2016) which has made it difficult to define or understand the scope of school leadership for improving student learning. The following paragraphs portray the current status of school education and student learning in India. The article further focuses on the key parameters that influence student learning in government schools while deriving key school leadership roles that would enable school heads to improve learning in the schools.

Challenges to learning in government schools in India

India has around 1.5 million schools and more than 250 million enrolments, and it is home to one of the largest and most complex education systems. Though the country has substantially improved its enrolment rate and access, the quality of education provided in the classroom continues to be dismal. National Achievement Surveys (NAS) have successively shown that student learning outcomes are below their grade level and there is a substantial reduction in grade appropriate learning as they move to higher grades (UNESCO, 2021). Only about 13-15% of students achieve higher order conceptual understanding (NCERT, 2020; UNESCO, 2021, p-25) which is a reflection of the low quality of teaching learning process happening inside classrooms. Data further reveals that the dropout rates of children at the primary level has increased from 0.8 in the year 2020-21 to 1.45 in the year 2021-22, while at the upper primary level, the dropout rates has increased from 1.9 in the year 2020-21 to 3.02 in the year 2021-22 (UDISE+, 2021-22). Though basic infrastructure facilities such as clean drinking water, electricity and girls' toilet have improved, computer facilities are available only in 47.5% schools while internet facilities are available only in 33.9% schools (UDISE+, 2021-22). Single teacher schools constitute 7.15% and about 89% of them are in rural areas (UNESCO, 2021, p-40) while 19% schools have teacher vacancies. In fact, small schools constitute over 70 per cent of all secondary schools in at least 20 states where pupil–teacher ratios can be as low as 8:1 (British council, 2019, p-13, RMSA Technical Cooperation Agency, 2015a). As per the 75th round household survey by National Sample Survey Organisation in 2017-18, the number of Out of School Children (OoSC) in the age range 6-14 is 96.93 lakhs, though from the data received from the states reveals 11 lakhs. Further there are 3.11 crore OoSC in the age range 6-18 (Ministry of Education, notification dated 7th January 2021). Another issue concerning the government schools and student learning is the increase in number of private schools since year 2000 (British Council, 2019,p-24), with ASER reporting a proportion of private schools at 31percent in 2016 and 2018 (British Council, 2019, p-24; Wadhwa, 2019, p-17). The increase in the number of private schools stand a huge challenge to the government schools as parents prefer to enrol their children in private schools rather than government schools. The other challenges faced by the Indian education system include a substantial urban-rural achievement gap; low school readiness of primary learners; shortage of trained teachers and an over ambitious curricula (British Council, 2019, p-13).

Factors influencing student learning in government schools in India

a. **School community contexts:** Community contexts concerns the differences in learning in schools located in the urban-rural contexts (Zhang & Pang, 2016). There is a growing gap in the achievement of students in rural and urban settings, especially in developing countries (Hallinger &Liu, 2016). The difference in achievement of students in urban-rural contexts accounts for the difference in allocation of physical and financial resources. Rural schools are also disadvantaged in terms of shortage of human resources (Othman & Muijs, 2013). In India, UNESCO (2021, p-151), has highlighted the need for special attention to be paid to 'difficult to staff' regions such as rural areas, districts with high number of scheduled caste and tribe population and north eastern regions where the ratio of teachers to students needs to improve.

b. **Student family backgrounds:** Students family backgrounds have an influence on students' success in schools (Coleman et al., 1966). Research evidence has acknowledged that socio-economic status of the family influences student achievement across schools (Coleman et al., 1966; Leithwood et al., 2004, p-46). In government schools in India, children who are enrolled mostly come from marginalised section of the population. According to study by Kumari and Chahal (2020), parents of children in government schools in India have low educational background or illiterate, work as labor in agriculture or as daily wage or artisan, are from backward communities, are not aware about 25% reserved seats and are mostly indifferent their child's education. The family's educational status influences learning indirectly by influencing the educational culture at home.

c. **Governance structures:** Govinda and Bandhopadhyay (2007) clarifies that the Constitution of India adopted in 2005, advocated decentralised governance for establishing grassroots level democracy through local governance under the framework of Panchayati Raj, through an electoral process. Though the move was reinforced by the Education Commission (1964-66) and further emphasized by NPE-1968, decentralisation took a back seat in the Indian education system. Rather than decentralization there was a 'deconcentration' of power with district level officers being vested with considerable authority especially with regard to recruitment, posting and transfer. In the 1990s there was a re-emergence of decentralization and Panchayati Raj, revived through the 73rd and 74th

Amendments of the Constitution in 1992 that led to the setting up of local bodies at the village, block, district and municipal levels, through a process of democratic elections, mandatory. In spite of these developments and constitutional amendments, the involvement of panchayat in day to day functioning of schools seems to be limited (Govinda et al., 2009). The devolution of powers and decision making authority at local levels were weakened. Though the rhetoric of decentralisation and community empowerment considers the role of the school heads as critical, the ground reality is that school heads have to function in a centralised administrative system; they occupy the lowest rung in the official hierarchy and command practically no authority even within school (Govinda, 2002). Govinda (2002) revealed that the role of the school head is undefined in terms of internal management of the school, personnel management and academic management, and that school head expect that they would receive instructions from higher authorities with regard to their functional responsibilities. Due to lack of autonomy within a centralised education system, decision making with respect to issues at the local level pertaining to political, economic, social and cultural contexts around the school are affected, which in-turn impacts student learning.

d. School conditions:

- **Instructional quality:** National Assessment Survey (2017) highlights that teacher quality is a key determinant of learning levels of students as research evidences reveal that Government schools in India mostly follow teacher-centric practices (UNESCO, 2021, p-14). Most Indian classrooms remain dominated by rote learning (Brinkman, 2015). According to Brinkman (2015), teacher beliefs play a major role in determining classroom practices-One common belief among teachers being that some students are simply not capable of learning – particularly students from lower socioeconomic or caste backgrounds (Brinkman, 2015, p-7). Dominant application of teacher centric pedagogies could be the prime reason for children not achieving higher order thinking skills such as critical thinking and problem solving. NEP2020 has advocated the need for the education system to move away from the culture of rote learning that is present today towards real understanding and towards learning how to learn (NEP2020, p-13).

- Teacher professional development: The quality of teachers impacts learning among children. Teacher professional development significantly contributes to learning achievement of students (NAS, 2017). The Indian education system has had challenges of under qualified teachers. UDISE (2016-17, p-42) reveals that the number of trained teachers in government schools was 83.82% in 2015-16 and 85.39% in 2016-17. UNESCO (2021, p-46) reports that in India a huge number of teachers across levels do not possess an academic degree from a college. The in-service training programmes currently being provided to teachers as part of their training do not come up to quality expectations and mostly follow the cascade model of training. A recent evaluation by the Government of India of an in-service teacher training program implemented under RMSA noted the lack of needs assessments in each state and the variations in training delivery and quality across the states (Beitelle, 2020, p-194).

School heads in government schools in India need to navigate and negotiate these challenges in order to improve student learning in their schools. The study by Robinson et al., (2008) revealed leadership dimensions that school heads need to focus on in order to influence student learning include establishing goals and expectations; strategic resourcing; planning, coordinating and evaluating teaching and the curriculum; promoting and taking part in teacher learning; and ensuring an orderly and supportive environment. The following paragraphs offer a description of each of these dimensions as significant for leadership for learning.

Implication for leadership for learning

a. **Establishing goals and expectations: V**ision and establishing goals has a direct impact on school performance taking into account three sets of intervening factors which are the leader, follower and organisational factors (Kantabutra, 2005). Leaders for learning should have an informed vision for their schools that is focused on academic achievement and is translated into achievable goals. Vision helps to develop a common language for school academic development. It will enable constant monitoring and review of the academic activities of the school. Good vision statements describe a better future for the school; encourages faith and hope and is inspirational and reflects high ideals. Vision mirror the culture, values, and needs of the school and the

surrounding community, while reflecting national and state level policies also.

b. **Ensuring an orderly and supportive learning environment:** Student learning requires school environments that is orderly, follows safety norms and is supportive of students activities. In this regard, leaders of learning needs to ensure that the school has clear rules and expectations that support identified behavioural and educational goals. Schools should reflect a positive culture that reciprocates and strengthens principles of equality, inclusion and democracy. Children, especially from socio-economically disadvantaged backgrounds need to be supported in their learning through academic support resources and adequate funds. Students apart, teachers show marked efficiency in teaching in environments that are supportive in nature. School heads therefore should protect teachers' instructional time and learning time, provide opportunities for teacher professional development and engage teachers in professional learning communities.

c. **Strategic resource management:** School heads may have to strategically manage human and physical resources. In government schools in India, according to UNESCO (2019, p-54), the workforce has a deficit of one million teachers with shortage in subject teachers and various other areas such as ECCE, special education, teachers for sports, music and arts and vocational education. NEP2020 taking cognizance of this challenge, promotes the idea of hiring local experts to school complexes and sharing them across clusters to deal with teacher shortage. School heads may need to strategically manage teachers and allocate teaching learning resources based on the schools' immediate needs. School heads have to determine what teaching expertise and infrastructure are needed in order to achieve student learning goals and supply and assign them accordingly.

d. **Planning, coordinating and evaluating teaching and the curriculum:** School heads should promote discussions with teachers during staff meetings centering on learning and student achievement. School principals should ensure implementation of learner centric pedagogies in classrooms. School heads should ensure systematic monitoring of student achievement while their assessment scores should be used for taking evidence based decisions on programme improvement.

    e. Promoting and taking part in teacher learning: School heads need to promote teacher leaders through engaging in teacher professional development. According to Bredeson (2000), school principals, in the role of an instructional leader, exercise significant influence on teacher professional development. School heads need to strategically plan and manage available school hours for teacher learning and development. This can be done through observation and feedback of teachers' classroom interactions, developing professional learning communities of teachers and through engaging in coaching and mentoring. According to the meta analysis by Robinson et al., (2008), this dimension of leaders' work produced a significant effect on student outcomes.

Conclusion

School leadership matters for improving student learning. The study analyses the role of school leadership in a developing country such as India, while elaborating on the present issues within the education system such as low academic outcomes, low socio-economic status of community, shortage of teachers, low quality teacher professional development, increase rate of drop out and persistence of out of school children within the system. The study, deriving from research evidences, outlines the 'leadership for learning' behaviours and roles that school heads need to display in order to improve student learning.

References

1. Beteille, T., Tognatta, M., Riboud, M., Nomura, S., Ghorpade, Y. (2020). Ready to learn: Before school, in school and Beyond school in South Asia. World Bank Group.

2. Bossert, S T., Dwyer, D C., Rowan, B., & Lee, G V (1982). The Instructional Management Role of the Principal, *Educational Administration Quarterly, 18*(3), 34–64.

3. Bredeson, P. V. (2000). The School Principal's Role in Teacher Professional Development, *Journal of In-Service Education*, 26,385-401. https://doi.org/10.1080/13674580000200114

4. Brinkmann, S. (2016). The Role of Teachers' Beliefs in the Implementation of Learner Centred Education in India, Thesis submitted for the degree of PhD in Education and International Development, UCL Institute of Education, London.

5. British C.ouncil (2019). The school education system in India: An overview.

6. Coleman, J.S., E.Q. Campbell, and C.J. Hobson. 1966. *Equality of educational opportunity*. Washington: National Center for Educational Statistics (DHEW/OE).

7. Conn K. (2014). *Identifying Effective Education Interventions in Sub-Saharan Africa: A meta-analysis of rigorous impact evaluations* (Doctoral dissertation). Retrieved from Columbia University Academic Commons. doi: https://doi.org/10.7916/D898854G

8. Day, C., Sammons, P., Leithwood, K., Hopkins, D., Harris, A, Gu, Q., & Brown, E (2010).*Ten Strong Claims about Successful School Leadership*,The National College for School Leadership, Nottingham.

9. Glewwe, P., Kremer, M., Moulin, S., & Zitzewitz, E. (2004). Retrospective vs. prospective analyses of school inputs: The case of flip charts in Kenya. *Journal of Development Economics,* 74, 251–268. doi:10.1016/j.jdeveco.2003.12.010

10. González.,Gomez.,Khampirat., &Gento (2021). Measuring the importance of pedagogical leadership according to stakeholder perception. *Revista de Educación*, 394, 37-62, DOI:10.4438/1988-592X-RE-2021-394-500.

11. Govinda, R. (2002). *Role of Headteachers in School Management in India: Case Studies from Six States*, New Delhi: Asian Network of Training and Research Institutions in Educational Planning (ANTRIEP).

12. Govinda, R., & Bandhopadhyay, M. (2007). Decentralisation of educational governance in India: Trends and Issues. In Christopher Bjork (Ed.,). *Educational Decentralization: Asian Experiences and conceptual contributions.* DOI:10.1007/978-1-4020-4358-1, ISBN: 978-1-4020-4356-7.

13. Gu, Q. & Johansson, O. (2013). Sustaining school performance: School context matters. *International Journal of Leadership in Education*, 16(3), 301-326.

14. Hallinger, P. (2011). Leadership for learning: lessons from 40 years of empirical research, *Journal of Educational Administration*, 49 (2), 125-142.

15. Hallinger , P., Gu¨mu¨s¸ S ., & Bellibas¸ MS.(2020) 'Are principals instructional leaders yet?' A science map of the knowledge base on instructional leadership, 1940–2018. *Scientometrics*, 122(3), 1629–1650.

16. Hallinger, P& Heck, RH. (2011). Exploring the Journey of School Improvement: Classifying and Analysing Patterns of Change in School

Improvement Processes and Learning Outcomes, *School Effectiveness and School Improvement*, 22(1), 1–27

17. Hallinger, P. (2009). *Leadership for 21st Century Schools: From Instructional Leadership to Leadership for Learning*. Hon Kong: The Hon Kong Institute of Education.

18. Hallinger, P., & W-Ch. Wang. (2015). *Assessing Instructional Leadership with the Principal Instructional Management Rating Scale*. Switzerland: Springer.

19. Kantabutra, S. (2005). Improving public school performance through vision-based leadership. *Asia Pacific Education Review*, 6(2), 124-136.

20. Knapp, M. (2014).The Evolution of Learning-focused Leadership in Scholarship and Practice. In *Learning-focused Leadership in Action. Improving Instruction in Schools and Districts, (Ed.,)*M. Knapp, M. Honing, M. Plecky, B. Portin, and M. Copland, 23–51. New York: Routledge.

21. Kremer, M., Brannen, C., & Glennerster, R. (2013). The challenge of education and learning in the developing world. *Science*, 340, 297–300. doi:10.1126/ science.1235350

22. Krishnaratne, S., White, H., & Carpenter, E. (2013). Quality education for all. What works in education in developing countries. Retrieved from https://www.3ieimpact.org/evidence-hub/publications/working-papers/quality-education-all-children-what-works-education

23. Kumari, P., & Chahal, D. (2020). A study of children enrolment in government elementary school in relation to socio-economic status. *International Journal of Scientific & Technology Research ,* 9 (2), 4875-4880.

24. Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). How Leadership Influences Student Learning. New York: The Wallace Foundation. Retrieved from http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/Documents/How-Leadership-Influences-Student-Learning.pdf).

25. Leithwood, K., Seashore Louis, K., Anderson, S., & Wahlstrom, K. (2004). How leadership influences student learning: A review of research for the learning from leadership project. New York: The Wallace Foundation.

26. Leithwood, K; Anderson, S., Mascall, B., & Strauss, T. (2010): How Leaders Influence Student Learning: The Four Paths,in T Bush, L Bell& D

Middlewood (ed):*The Principles Of Educational Leadership And Management*, pp 13-30, London, England: Sage

27. McEwan,J.P. (2015). Improving learning in primary schools of developing countries. A meta analysis of randomized experiments. *Review of Educational Research*, 85(3), 353-394. DOI: 10.3102/0034654314553127.

28. Ministry Of Education notification dated 7th January 2021 (ref: https://www.education.gov.in/sites/upload_files/mhrd/files/guidelines_oosc.pdf)

29. National Education Policy (2020): Ministry of Human Resource Development, Government of India. Retrieved from https://www.mhrd.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

30. NCERT.(2020). National Assessment Survey 2017. Class III, V, VIII: National Report to Inform Policy, Practices and Teaching Learn

31. NCSL-NUEPA (2014). School Leadership Development: National Programme Design and Curriculum Framework, 1-36. Retrieved from http://ncsl.niepa.ac.in/Materials/English_National_PDCFSLD.pdf.

32. RMSA Technical Cooperation Agency. (2015a). Equity and Efficiency in Expansion of Secondary Schools: Research Report III. New Delhi: MHRD.

33. Robinson, V M J., Hohepa, M., & Lloyd, C. (2009). School Leadership and Student Outcomes: Identifying What Works and Why, *Best Evidence Synthesis*. Wellington: Ministry of Education.

34. Saini, S., &Goswami, I. (2019). A Preliminary Study to Understand Leadership Style of Senior Teachers through Their Perceptions and Contexts in Formal Schools in Mumbai,*Sage Open*, 1-9, doi: 10.1177/2158244019853460.

35. Saravanabhavan, R;Pushpanadham, K &Saravanabhavan, S (2016): School Leadership: India at the Crossroads, In Harlestig, C Day& O Johansson (Ed.,), *A Decade of Research on School Principals: Cases from 24 Countries*, pp-471-482, Switzerland:Springer. doi: 10.1007/978-3-319-23027-6.

36. Spillane, J. (2013). The Practice of Leading and Managing Teaching in Educational Organisations. In Leadership for 21st Century Learning, OECD Center for Educational Research and Innovation, 59–82. Paris: Fundació Jaume Bofill.

37. UNESCO. (2021). No teacher No class: State of the education Report for India 2021.

38. Wadhwa, W. (2010). 'Are private schools really performing better than government schools?, in ASER (ed.,) Annual Status of Education Report (Rural) 2009 Provisional. New Delhi: ASER Centre, 6–8.

39. World Development Report.(2018). *Learning to Realise Education's Promise*, Washington DC: International Bank for Reconstruction and Development / The World Bank. Retrieved from https://www.worldbank.org/en/publication/wdr2018

ATTITUDES OF SECONDARY SCHOOL STUDENTS TOWARDS PHYSICAL SCIENCE

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ABSTRACT

The purpose of the present study is to study the attitude of the secondary school students towards Physical Science under WBBSE. The study was done following the descriptive survey method and was quantitative in nature. Schools were categorized into urban and rural secondary schools from Nadia District. Out of all secondary schools in the district affiliated by WBBSE, two schools were selected through random sampling, out of which 1 urban and 1 rural secondary school. The sample consisted of 110 students, including 55 boys and 55 girls, studying in class IX and X. A self-made scale, Physical Science Attitude Scale (PSAS) was used to collect data from school students. t-test was used to test the significance of difference between means in relation to gender, locality and class level of the students. Findings indicated that overall a very good attitude towards Physical Science is present among the students. There exists significant difference in attitude between urban and rural students and between the male and female students. But no significant difference was found on the basis of class (IX & X).

Key words: Attitude, Secondary, Students, Physical Science

1.1 Introduction:

Attitude refers to a psychological construct, a set of emotions, beliefs and behaviours towards a particular object, person, thing or event. The extent to which a student acquires proficiency in a subject largely depends on his/her attitude towards that subject. A positive attitude towards the subject increases proficiency. Students' attitudes towards science modify their achievement in science. Today we live in a scientific world. Wide application of science can be observed in almost every aspect of daily life. Therefore there's a pressing need to increase the number of students studying science and the demand for science-educated human resources is increasing in the society. Therefore, it is important

to develop a positive attitude of students towards science starting from school level. This is why it is essential to check students' attitude towards science. Therefore, recognition and influence of attitudes became to be a vital part of educational research. This study inspects students' attitudes towards Physical Science, not towards science in general.

Students' attitude towards science have been broadly studied (Dhindsa & Chung, 2003; Osborne, Simon & Collins, 2003), but research was originally paying attention on science in general (Dawson, 2000) and a reduced amount of concentration was addressed to particular disciplines like biology, physics or chemistry (Salta & Tzougraki, 2004). This can partially conceal students' attitudes because science is not viewed as uniform subject (Spall et al., 2003). Generally, students' attitudes towards science decrease with age (Ramsden, 1998: Osborne, Simon & Collins, 2003). Boys show positive attitudes towards science than girls (Simpson & Oliver, 1985; Schibeci & Reley, 1986; O'Brien & Porter, 1994; Francis & Greer, 1999) and negative attitudes are associated with the Physical sciences rather than biological sciences (Spall, Barrett, Stanisstreet, Dickson & Boyes, 2003; Spall, Stanisstreet, Dickson & Boyes 2004).

1.2 Objectives:

The following objectives are laid down for study:

1. **O1:** To investigate whether there is any significant difference in attitude between the male and female students.

2. **O2:** To examine whether there is any significant difference in attitude between the students of different classes (IX/X).

3. **O3:** To investigate whether there is any difference of the attitude between rural and urban students.

1.3 Statement of hypotheses:

1. **H01:** There is no significant difference in attitude between the male and female students.

2. **H02:** There is no significant difference in attitude between the students of different classes (IX/X).

3. **H03:** There is no significant difference in attitude between the students of rural and urban schools.

1.4 Tools:

The following tool, constructed and standardized by the investigator, was used in this study -

The researcher has used only one tool for this particular study. It was a self-made scale, Physical Science Attitude Scale (PSAS) to collect data from school students.

Physical Science Attitude Scale (PSAS):

The scale was constructed by the investigator with the help of her supervisor. It was a five point Likert type scale. The categories of responses were 'strongly agree', 'agree', 'neutral', 'disagree' and 'strongly disagree'. All the items were positive and '5', '4', '3', '2', '1' were the respective scores awarded for the responses to the items. It had five dimensions i.e. (1) Student's personal interest, (2) Student's ability to link between physical science and real world, (3) Effort of learning physical science, (4) Problem solving and 5) Conceptual clarity & understanding. In these five dimensions first one had seven items, second one had six items, third dimension had five items, fourth dimension had seven items and the fifth one had five items respectively. A total 30 items were there in the scale.

1.5 Sample:

For selection of sample random sampling technique was used in this study. The schools were categorized into urban and rural secondary schools from Nadia District. Out of all secondary schools in the district affiliated by WBBSE, two schools were selected, out of which 1 urban and 1 rural secondary school. All the students of Class-IX and class X were included in the sample. The sample consisted of 30 boys and 25 girls of the urban school and 25 boys and 30 girls of the rural school. Thus 110 students of class IX and X, those who are studying Physical Science as a core subject were included in the sample.

1.6 Analysis of the data:

Descriptive statistics of Physical Science Attitude Scale (PSAS)

Mean	126.6422018
Standard Error	1.495577518
Median	129
Mode	123
Standard Deviation	**15.6142877**
Sample Variance	243.8059803
Kurtosis	1.06304621
Skewness	-1.066347785
Range	72
Minimum	78
Maximum	150

The mean score of PSAS among the 110 school students from two high schools was found to be 126.6422 (score ranged from 78 to 150) which is higher than 90 points indicating indecisive neutral attitudes and belongs to the "very good" attitudinal range (above 120 to 150) Thus, from this statistical value it may be assumed that overall, a very good attitude is present towards Physical Science among the secondary students under WBBSE

Table-1: t-Test; Two-Sample Assuming Equal Variances of Male vs. Female attitudes towards Physical Science

	Male	*Female*
Mean	**138.1851852**	**115.5925926**
Variance	36.34241789	186.9252271
Observations	55	55
Pooled Variance	111.6338225	
Hypothesized Mean Difference	0	
df	108	
t Stat	**11.11092088**	
P(T<=t) one-tail	8.76855E-20	
t Critical one-tail	1.659356034	
P(T<=t) two-tail	**1.75371E-19**	
t Critical two-tail	**1.982597262**	

calculated t-value is 11.11092088 and t-critical (two tailed) value is 1.982597262. i.e., Calculated t > t Critical. Hence, t is significant at 0.05 level. So, H01 is rejected. So, it can be inferred that there is significant difference in attitude towards Physical Science between the students of different genders.

Table-2: t-Test; Two-Sample Assuming Equal Variances of class IX vs. class X attitudes towards Physical Science

	Class- IX	Class- X
Mean	**124.9272727**	**128.7272727**
Variance	294.3279461	193.5353535
Observations	55	55
Pooled Variance	243.9316498	
Hypothesized Mean Differenc	0	
df	108	
t Stat	**-1.275897736**	
P(T<=t) one-tail	0.102364465	
t Critical one-tail	1.659085144	
P(T<=t) two-tail	**0.204728929**	
t Critical two-tail	**1.982173483**	

Calculated t-value is -1.275897736 and t-critical (two tailed) value is 1.982173483. i.e., Calculated t < t Critical. Hence, t is not significant at 0.05 level. So H02 is accepted here. So, it can be inferred that there exists no significant difference in attitude towards Physical Science between the students of class IX and X.

Table -3: t-Test; Two-Sample Assuming Equal Variances of Urban vs. Rural attitudes towards Physical Science

	Urban	*Rural*
Mean	**130.6111111**	**122.6851852**
Variance	45.97798742	418.82355
Observations	55	55
Pooled Variance	232.4007687	
Hypothesized Mean Difference	0	
df	108	
t Stat	**2.70155063**	
P(T<=t) one-tail	0.004018841	
t Critical one-tail	1.659356034	
P(T<=t) two-tail	**0.008037682**	
t Critical two-tail	**1.982597262**	

Calculated t-value is 2.70155063 and t-critical (two tailed) value is 1.982597262. i.e., Calculated t > t Critical. Hence, t is significant at 0.05 level. So, H03 is rejected. So, it can be inferred that there exists significant difference in attitude towards Physical Science between the students of urban and rural schools.

1.7 Findings:

❖ Mean score of PSAS is 126.6422. So overall a very good attitude towards Physical Science is present among the secondary students under WBBSE.

❖ Majority (105 out of 110) of the sample showed very good attitude (score range 91-150) towards Physical Science.

❖ Boys showed better attitude than girls.

❖ Urban students showed slightly better attitude than rural students.

❖ Students of class IX and X showed almost same attitude towards the subject.

1.8 Educational implications:

The teacher, parents and educationists should help the students to develop a favourable attitude towards Physical Science. The favourable attitude is helpful in these contexts;

1. Science is important from practical point of view. It is very difficult to cope up with the technology centric world without sufficient knowledge of pure science.

2. It is very important to develop favorable scientific attitude among the students from the school level to fulfill the emerging needs of science educated manpower.

3. It will be helpful for the Physical Science teachers and educators to know if there is any attitudinal difference among his/her students and to teach accordingly.

1.9 Limitations:

- This study was conducted only in two high schools. The number of samples could have been increased by taking more number of schools under the study.

- Time was one of the main hindrances in this study. Such a short period of time forced the investigator to cut off the area of the study.

- There lies scope for exploration of the results by qualitative means.

1.10 Bibliography:

- Best, J.W. (2004). Research in Education. New Delhi: Prentice Hall of India Private Ltd.

- Kaul, L., (2010). Methodology of Educational Research. New Delhi, Vikas Publication.

- Kothari, C. R. & Garg, G., (2014). Research Methodology: Methods and Techniques. Third Edition. Delhi, New Age International Publication.

- Mangal S. K., (2009). Statistics in Psychology and Education. Second Edition, New Delhi, PHI Learning Private Ltd.

- Mangal S. K., (2011). Essentials of Educational Psychology. Fifth printing, New Delhi, PHI Learning Private Ltd.

- Singh, A. K., (2010). Tests, Measurements and Research Methods in Behavioural Sciences. Patna, Bharati Bhawan.

- Paul,D., (2020-21). Research Methodology and Statistical Techniques. (Revised 4th ed.), Kolkata, Rita Book Agency.

1.11 References:

- Kaya,H.(2011). Attitude Towards Physics Lessons And Physical Experiments Of The High School Students. European J of Physics Education Vol.2 Issue 1 2011 ISSN1309 7202.

  Retrieved from- https://files.eric.ed.gov/fulltext/EJ1053790.pdf

- Mbaabu, F. N., Gatumu, H. N. & Kinai, T. (2011). Factors Influencing Secondary School Students' Attitude Towards the Study of Physics in Imenti South District, Kenya. Journal of Research in Education and Society; Volume 2, Number 2, August 2011. Retrieved from

  https://irlibrary.ku.ac.ke/handle/123456789/1405/browse?authority=0f70 6f2d-f181-411f-8946-c5274da87ebf&type=author

- Emmanuel, A.O. (2012). An Investigation into the Attitude of Secondary School Students Toward Physics in Selected Secondary Schools in Akoko South West Local Government Area of Ondo State. Retrieved fromhttps://www.academia.edu/36178169/AN_INVESTIGATION_INT O_THE_ATTITUDE_OF_SECONDARY_SCHOOL_STUDENTS_TO WARD_PHYSICS_IN_SELECTED_SECONDARY_SCHOOLS_IN_A KOKO_SOUTH_WEST_LOCAL_GOVERNMENT_AREA_OF_OND O_STATE

- Godwin,B.A. & Okoronka,U.A.(2015). Attitude and Academic Performance of Senior Secondry School Students in Physics in Nigeria. International Conference on Education, Social Sciences and Humanities, ISBN: 978-605-64453-3-0. Retrieved from http://www.ocerint.org/socioint15_epublication/papers/115.pdf

- Sitotaw,B. & Tadele, K.(2016) . Students attitudes towards physics in primary and secondary schools of Dire Dawa City administration, Ethiopia. World Journal of Educational Research and Reviews, 3(1): 044-050. Retrieved from https://premierpublishers.org/wjer/130220167516

- Andrie,C. (2017). Secondary School Students' Attitude Towards Physics Based on Gender and Grade Level Differences. Vol 2 No 01 (2017): Vehicle for Scientific Education, Educational Scientific Work Forum. Retrieved from https://journal.unsika.ac.id/index.php/pendidikan/article/view/1034

- Sheldrake, R., Mujtaba, T. & Reiss, M.J. (2017). Students' Changing Attitudes and Aspirations Towards Physics During Secondary School. Res Sci Educ 49, 1809–1834 (2019). https://doi.org/10.1007/s11165-017-9676-5. Retrieved from https://link.springer.com/article/10.1007/s11165-017-9676-5#citeas

- Nicholas,M,N., Jacob,M,K., and Newton,K,K. (2017). "Influence of Selected Factors on Students' Attitude towards Physics in Public Secondary Schools." American Journal of Educational Research, vol. 5, no. 9 (2017): 939-943. doi: 10.12691/education-5-9-2. Retrieved from https://pdfs.semanticscholar.org/3b89/ce18c4add12dc898c9d1e515fe506 4664efe.pdf

- Ibrahim, N. et al. (2019). Attitude in Learning Physics among Form Four Students. Social and Management Research Journal 16(2):19. DOI:10.24191/smrj. v16i2.7060. Retrieved from https://www.researchgate.net/publication/336743641_Attitude_in_Learn ing_Physics_among_Form_Four_Students

- Chala,A.A., Kedir,I. & Wami,S. (2020). Secondary School Students' Beliefs Towards Learning Physics and Its Influencing Factors. Research on Humanities and Social Sciences. ISSN 2224-5766 (Paper) ISSN 2225-0484 (Online), Vol.10, No.7, 2020. Retrieved from https://www.iiste.org/Journals/index.php/RHSS/article/view/52361

- Agnes,M., Yadav,L.L. & Amadalo, M.M. (2021) . Students' attitudes towards physics in Nine Years Basic Education in Rwanda. International Journal of Evaluation and Research in Education (IJERE), Vol. 10, No. 2, June 2021, pp. 648~659, ISSN: 2252-8822, DOI: 10.11591/ijere. v10i2.21173. Retrieved from https://files.eric.ed.gov/fulltext/EJ1299384.pdf

- Kotreshwaraswamy,A.S.(2012) . A study on attitude of high school students towards Physics lessons and physical experiments. Global Journal for Research Analysis. Volume: I, Issue: III, August-2012. Retrieved from https://www.worldwidejournals.com/global-journal-for-research-analysis-GJRA/article/a-study-on-attitude-of-high-school-students-towards-physics-lessons-and-physical-experiments/MTE0/?is=1

- Sethi,U. (2015). Study Of Attitude of The Students Towards Science, in Relation to Certain Non-School Factors. International Journal of

Education and Information Studies. ISSN 2277-3169 Volume 5, Number 1 (2015), pp. 75-80. Retrieved from https://www.ripublication.com/ijeisv1n1/ijeisv5n1_10.pdf

- Binwal,H.K.(2020). Attitude towards science: A study of 9th grade adolescent students. International Journal of Indian Psychology, 8(1), 609-615. DIP:18.01.076/20200801, DOI:10.25215/0801.076. Retrieved from https://ijip.in/articles/attitude-towards-science-a-study-of-9th-grade-adolescent-students/

- Bajaj,M. & Devi,S. (2021). Attitude of Secondary School Students Towards Science in Relation to Academic Achievement, Gender and Type of School. MIER Journal of Educational Studies Trends and Practices, 11(1(a) SPL), 82–92. https://doi.org/10.52634/mier/2021/v11/i1(a)SPL/1908. Retrieved from https://www.mierjs.in/index.php/mjestp/article/view/1908

RESILIENT URBAN DEVELOPMENT CHALLENGES:
A CASE STUDY OF HYDERABAD CITY

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ABSTRACT

Hyderabad is a city with a rapidly growing population that will be a megacity, with more than ten million inhabitants by 2030. The city's swift population growth brings several challenges to sustainable development. The urbanization process increases the demand for available water, housing, and urban environmental issues for city dwellers. This phenomenon requires resilient urban development to address the challenges of urban growth on the one hand and to take into account the need of the future generation on the other hand. The paper examines the resilient urban development challenges in Hyderabad city based on sustainable development goal 11, one of the 17 goals that make up the sustainable development agenda for 2030, which offers guidelines for urban planning and aids cities with a growing population. According to the goal, metropolitan areas must offer public transportation, green spaces, and safe and affordable housing. Therefore, the present paper makes the case to study the challenges of urbanization in Hyderabad city based on goal 11 of the United Nations. The study outcome will be useful for researchers, academicians, urban planners and policy-makers to protect and utilize the existing resources bearing in mind the resilient urban development and environment.

Keywords: Hyderabad,   Resilience,   Urban   Development, Environment, Challenges.

Introduction

Spontaneous growth affects the viability of existing resources and infrastructure in the city and the economy and society of the rural periphery, resulting in vulnerability at both end of the scale. This is true in terms of demography as well as spatial extent.[1]

The peri-urban area is a dynamic, semi-natural ecosystem that offers orchards, open space, and water bodies as natural resources for expanding cities. Due to peri-urbanization, ecologically fragile lands are appropriated for use in home development and other construction-related activities. These alter the agricultural landscape, constrict open spaces, and put more strain on water resources. These regions are characterized by a lack of infrastructure for sanitation and hygiene, industrial effluent, air pollution, and insufficient delivery of essential services. A city's solid waste is frequently deposited in peri-urban.[2] This tendency is especially prevalent in the metropolitan areas of developing nations that have engaged in extensive mass urban migration. Such a scenario has an effect on the city's ecology, including its health and sanitation.

In Hyderabad, the high density urban area began in 1989 and expanded into other land use classes between 1989 and 2011. Urbanization has also had an impact on the city's water resources, both qualitatively and quantitatively. In the city's northern and southern regions, the fast transformation of previous land use types into urban areas continued. Urban growth was mostly caused by residential and industrial expansion in the north-east, and by residential growth in the south. Most of the migrants have arrived in the east and south-east regions from the nearby Nalgonda district. In the past 40–50 years, Hyderabad's periurban area has had a significant rise in population and built-up area as a result of this significant migration of residents from the surrounding districts.[3]

The challenges of expanding Hyderabad sustainably have multiplied over the past few years as the metropolitan area has spread to the outlying areas and the population has expanded quickly. Basic infrastructural supports like housing, water supply, power distribution, transportation facilities, and waste and sewage

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[1]Alam, Shah Manzoor, and Kalpana Markandey. "Consequences of Unplanned Growth: Metropolitan Hyderabad as a Case Study." Planning and development for urban and regional areas, pp. 203-219. Springer, Cham, 2020.

[2]Gupta, Anil K., Swati Singh, Mahak Agarwal, Nivedita Mani, and Shiraz A. Wajih. "Peri-urban ecosystems and urban resilience: training modules, instructions and reference materials." (2021).

[3]Alam, Shah Manzoor, and Kalpana Markandey. "Consequences of Unplanned Growth: Metropolitan Hyderabad as a Case Study." Planning and development for urban and regional areas, pp. 203-219. Springer, Cham, 2020.

treatment for the city are still restricted by the municipal boundaries as a result of this uncontrolled urban growth. However, there is a lack of suitable infrastructure when it comes to facilities for sports, recreation, substandard housing, education, and health care, all of which require significant investment.[4] Based on UN Sustainable Development Goal 11, the current study investigates the challenges of resilient urban development in Hyderabad city.

STUDY ARE

Golconda-Hyderabad was the original twin city, followed by the idea of Hyderabad Secunderabad and then by the sizable cantonments built by the British and the Nizam Figure (1). These developments led to the birth of Hyderabad. With Osmania University, Railways, NGRI, N.F.C., E.C.I.L., and a number of small and medium-sized businesses and organizations, the public land use of the old Hyderabad is mostly restricted to the South, East, and a sizable North East. The latitude and longitude range from (17° 15' 30", 78° 15' 00") to (17° 40' 15", 78° 40' 15") for the study of Hyderabad city and its surroundings.

The Hyderabad Urban Development Area (H.U.D.A.) covers around 1865 square kilometers. 29 planning zones separate the HUD region (11 Zones inside municipal limits and 18 zones in the non-municipal limits or peripheral areas).
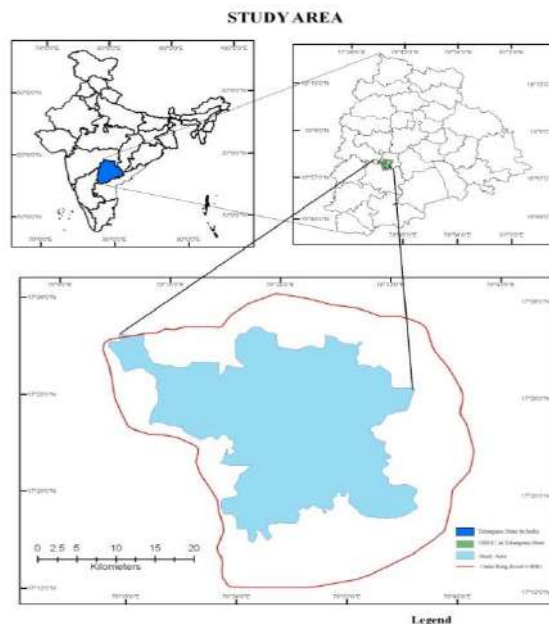
Figure 1: Shows study Area Map

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[4]Ibid.

OBJECTIVE OF THE STUDY

- The present study aims to study the challenges of resilient urban development in Hyderabad city based on the United Nations Goal No. 11.

METHODOLOGY

The present study has chosen the SDG number 11 as its theoretical approach which has guided the direction of the research. Moreover, extensive literature review has consulted to meet the objective of the study. The secondary data in the current study include books, articles, authentic and relevant websites, and United Nations websites.

RESILIENT URBAN DEVELOPMENT BASED ON UNITED NATIONS GOAL 11

Sustainable development has emerged from a series of conferences to cope with the burning challenges of 21 Century: poverty, rising inequality, and deteriorating conditions for both human and environmental health. The main definition of sustainable development, which is as follows: "Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs," was established by the United Nations environment and development commission in a report that was published in 1987."

The definition says that there are not only equal rights for all walks of life to utilize the present resources but also It alarming that the resources we have, are limited and scarce; therefore, the present generation is responsible not only for proper utilization of the existing resources but also take in to account the need of future generations. The concept of sustainable development was further improved by the UN conference on the Environment and Development (UNCED) on 1992, which was held in Brazil. The agenda 21 activities were discussed under the theme of environment and sustainable development. This theme includes: The management of human settlements, effective use of natural resources, preservation of the world's commons, and sustainable economic growth are all important.[5]

The 1992 summit distinguishes that the present practice and consumption of resources in most developing and industrial nations are not healthy and sustainable. As a result, based on agenda 21, all the members of the United

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[5]Paul, Bâc Dorin. "A history of the concept of sustainable development: Literature review." The Annals of the University of Oradea, Economic Sciences Series 17, no. 2 (2008): 576-580.

Nations should follow the United Nations guidelines for sustainable consumption of resources and build a sustainable development roadmap.

According to the United Nations, Housing and Sustainable Urban Development Report under the New Urban Agenda/UN Habitat III (2017), the urban population will be doubled by 2050, posing some challenges to a resilient and sustainable urban environment. The growth in the urban population will automatically intensify economic, social and cultural activities, which will cause environmental and humanitarian consequences. This scenario creates more demand and scarcity in terms of housing, infrastructure, basic services, food security, health, education, job opportunity, security and greenery within the city environment.[6]

According to the UN-Habitat report (2015), almost one-quarter of the world's population live in slums and informal settlements. That is why the Sustainable Development Goal-11 (SDG-11) of the United Nations proposes the 2030 agenda for sustainable development to "upgrade slums" by 2030. This agenda ensures "adequate, safe and affordable housing" by the 2030 deadline.[7]

RESILIENT URBAN DEVELOPMENT CHALLENGES IN HYDERABAD CITY

1. Population Growth in Hyderabad

As the capital of Andhra Pradesh and, before that, the feudal state of Hyderabad under the Nizams, Hyderabad has always had a prominent position. Hyderabad is also a significant Indian city and a famous international metropolis in the post-independence era. Telangana, a recently created state in southern India, presently has Hyderabad as Its capital.

Urban sprawal has developed in Hyderabad as a result of the city's population expansion. Urban growth that is unchecked and disorganised is what leads to the expansion of urban areas. Urban sprawl, or "sprawal," is the unplanned urban growth that occurs around the edges of major cities, along major thorough fares, and along city-to-city roads.

Due to unplanned growth, a lack of prior information and failure to forecast such growth during planning and policy making, this region lacks essential amenities. Therefore, a lack of essential services like water, electricity, sanitary facilities, and so forth may be one of the effects of population increase. Together, these forces have an impact on the ecology, endangering the ability of cities to flourish

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[6] New Urban Agenda, 2017.
[7] New Urban Agenda, 2017.

sustainably. In this regard, Hyderabad's urban population may be one of the obstacles to the city's sustainable urban development (UN-Habitab, 2020).

Population Growth in Hyderabad city

Year	Population	Percentage of Growth	Population Increase
1970	1, 748,000	----	----
1975	1, 240,514	19.30%	338,000
1980	2,086,000	19.20%	401,000
1985	3,209,000	29.00%	722,000
1990	4,193,000	30.70%	984,000
1995	4,825,000	15.10%	632,000
2000	5,445,000	12.80%	620,000
2005	6,403,000	17.60%	958,000
2010	7,578,000	18.40%	1,175,000
2015	8,944,000	18.00%	1,366,000
2020	94, 78,180	14.2%	13, 06,978
2025	10, 802,193	12.67	13, 337,08
2030	12, 99,3101	11.58	13, 76,073

Source :   https://worldpopulationreview.com/world-cities/hyderabad-population/ Retrieved on 2022.

The above table indicates the rapid population growth in Hyderabad. The population of Hyderabad city was 1 million and 748 thousands by 1979 while during the 2000 the population of the city increased to 5.5 million. Within span of 30 years the city population quadrilateral. In 2010 this population became more than 7.5 million and during 2020 it became almost 10 million. Also the population of Hyderabad estimates that will become more than 12 million by 2030. As a result, Hyderabad is considering as on the mega city of India after Bangalore and passion the fourth fastest growing city in India. The Figure (2) illustrates the distribution of population and density spread out from the core city of Hyderabad toward north east, North West and the east. The major roads that radiate out from the city appear to tug the settlements in their direction, and this is mirrored in the structure of the road network. Most frequently, the population distribution pattern appears to follow the line of transportation.

Hyderabad Population Density
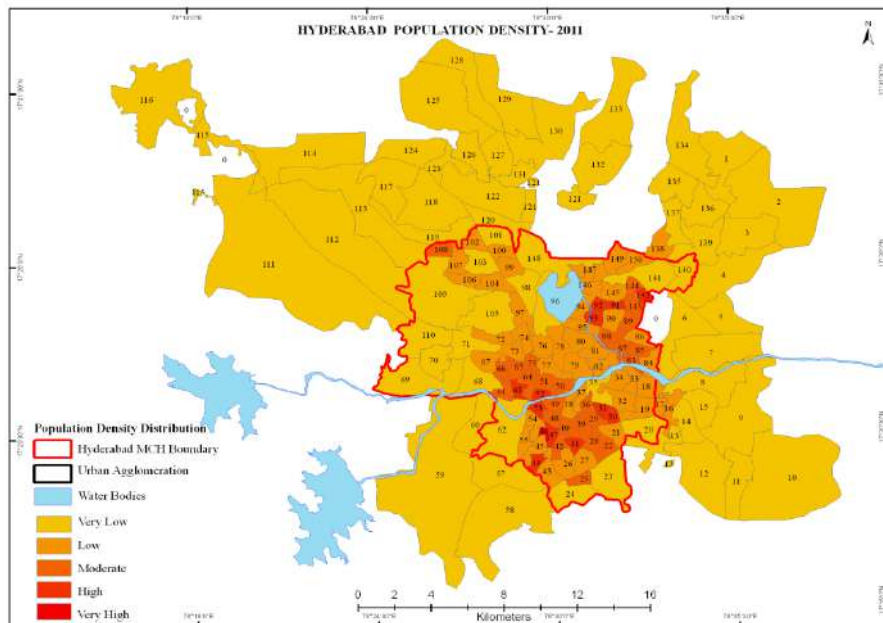
Figure: 2. Hyderabad Population Density: Source of Data: Census of India 2011

Additionally, the former Hyderabad Urban Development Authority (HUDA), Hyderabad Airport Development Authority (HADA), and Cyberabad Development Authority were combined to form the HMDA (CDA). In order to plan, coordinate, oversee, promote, and secure the projected development of the Hyderabad Metropolitan Region, HMDA was established. The Hyderabad Metropolitan Water Supply & Sewerage Board, the Andhra Pradesh Transmission Corporation, the Andhra Pradesh Industrial Infrastructure Corporation, the Andhra Pradesh State Road Transport Corporation, and other similar organizations' development initiatives are coordinated by this organization. The Hyderabad Metropolitan Development Authority is depicted in Figure 3. (HMDA).
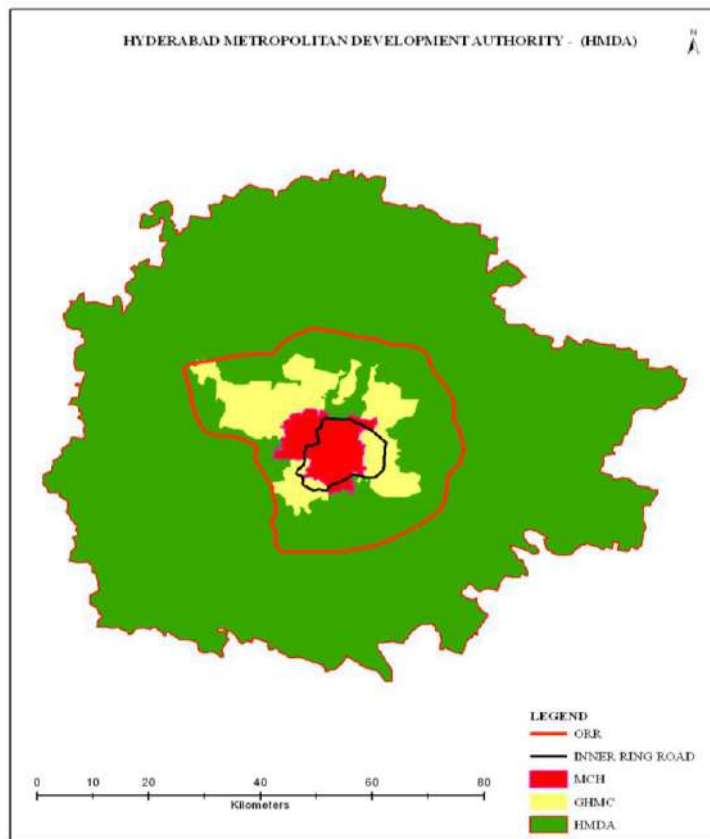
Figure 3. Shows Hyderabad Metropolitan Development Authority (HMDA)

2. Slums in Hyderabad

Slums are frequently described as "structurally and environmentally unsound houses and neighborhoods. A result of numerous disadvantages, including illegitimate land ownership, poor environmental conditions, and insufficient housing, as well as the difference between market demand and official legal and formal supply of housing."[8]

According to the 2001 census, slum dwellers make up one-third of the city's population. IT demonstrates that between 2001 and 2011, the number of people living in slums increased by more than 2.5 times. In other words, 601,336 people lived in slums in Hyderabad in 2001. By 1994, there were 811 slums that had been notified, up from 106 in 1962. In 2001, there were 1,631 slums spread out throughout the Hyderabad Urban Agglomeration, with a high population density.

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[8] Sheth, Amey Z., Nagendra R. Velaga, and Andrew DF Price. "Slum rehabilitation in the context of urban sustainability: a case study of Mumbai, India." (2009).

The Greater Hyderabad Municipal Corporation now has jurisdiction over the nine bordering municipalities, including Serrilingampally, Kukatpally, Quthbullapur, Alwal, Malkajgiri, Kapra, Uppal Kalan, LB Nagar, and Rajendra Nagar, which were formerly part of the Municipal Corporation of Hyderabad (Government of India, 2005).

The Hyderabad Urban Research and Action Initiative's most recent statistics reveals that, with a total population of 16,20,452 people, Hyderabad city contains more than 1000 notified and more than 400 un-notified slums.[9]

Without sufficient urban planning, these slums began to expand and develop on unoccupied lots of land. When the surrounding districts started to become densely populated, they were located in the middle of these residential zones, in the very heart of the city. [10]

Insofar as the expansion of modern industry is linked to the emergence of the slum phenomenon, it is important to keep in mind that Hyderabad was once the capital of a feudal state, and industrialization is a relatively new phenomenon. The slum situation is likely to become considerably more serious if it is not regulated, as seen by the slums' extraordinary expansion in recent years. [11]

Around industrial and commercial hubs, slums predominate. The creation of jobs in the business district centers, which place a heavy burden on the area's housing capacity, especially for low-income groups, is the main cause of the expansion of slums around these business districts. As an industrial city, Hyderabad has the same rise of slums as other industrial cities in India. In addition to being a popular location for slums, commercial and industrial complexes also tend to produce them. These include railway stations, railroad workshops, wholesale marketplaces for fruits and vegetables, etc. In ward number, Kachiguda Railway Station is the source of two slums. The Khairatabad, Nallagutta, Hyderabad, and Begumpet Railway Stations provide employment for residents of eleven additional slums in various wards. Similar to this, hundreds of individuals who work in the vegetable markets in Khairatabad, Chintal Basti, Charminar, Secunderabad, Begum Bazar, and other cities find sanctuary in slums. Hospitals, whose low-income employees seek shelter in slums (like the slum adjacent the

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[9]https://www.siasat.com/government-paying-no-attention-to-situation-in-slums-during-covid-times-1927530/Retrieved 2022.

[10]https://www.researchgate.net/publication/348836300_SLUMS_OF_HYDERABAD_A_SPATIO_-TEMPORAL_ANALYSIS/Retieved 2022.

[11]Naidu, Ratna. "A STUDY OF SLUMS IN HYDERABAD—SECUNDERABAD." *Indian Journal of Social Work* 39, no. 3 (1978): 297-312.

Victoria Hospital), and the Nehru Zoological Park, whose low-income employees reside in a nearby slum, are two other significant businesses that have given rise to slums in Hyderabad.[12]

Furthermore, the slums that are already present in Hyderabad, especially the unreported slums, have the potential to experience a rapid increase in population in the near future. This phenomenon may serve as one of the obstacles to Hyderabad's robust urban development.

3. Pollution in Hyderabad

Reduced adverse per capita environmental impact of cities is one of SDG goal number 11's objectives, which includes paying particular attention to air quality and municipal and other waste management. As a result, the most crucial element in maintaining a safe and healthy urban environment is air quality. Air pollution is now a major cause of worry in many nations throughout the world. Numerous elements, mostly classified as natural sources and anthropogenic causes, are to blame for the changing composition of the ambient air.

Hyderabad's air quality frequently exceeds that

Hyderabad's air quality frequently exceeds that improvement. In Hyderabad, direct vehicle exhaust, road dust, industrial coal combustion, and rubbish burning are the main sources of air pollution. These results highlight the need to reduce emissions from all known sources and concentrate in particular on low-hanging fruit like road dust and garbage burning, while institutional and technical developments in the transportation and industrial sectors are sure to increase efficiencies.

4. Transportation in Hyderabad

The city of Hyderabad's transportation system may face difficulties due to its rapid population increase. Due to this, there were previously unheard-of traffic bottlenecks in the mornings and nights. Compared to public transportation, this circumstance is more common with private transportation.

The provision of a safe, cheap, accessible, and sustainable transportation system for all, improving road safety, particularly by extending public circumstances, women, children, individuals with disabilities, and older persons, is one of the targets for goal 11 of the Sustainable Development Goals. However, compared to an ideal requirement of 70%, it is estimated that public transportation only

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[12]Kranthi, Natraj, and Kavita Daryani Rao. "Security of tenure and protection against evictions of slum dwellers: a case of Hyderabad." *Institute of Town Planners India Journal* 7, no. 2 (2010): 41-49.

makes about 40% of all passenger transportation in Hyderabad. (C. Ramachandraiah, 2007).

The network of city roads is dense and is maintained to different standards. The arterial roads that connect the localities to the main roadways are typically in poor shape, despite the fact that the main roads are generally in decent condition. As the top layer of the road is washed away during the monsoon season, potholes also form on some of the key routes, endangering people's lives and property.[13] Hence, the current situation of transportation and the growth of population in the city can be a great challenge for resilient urban development in Hyderabad metropolitan city planning.

5. WATER SUPPLY

With a population of 7.7 million and strong population growth, Hyderabad City is a developing metropolis. In the future, it is expected to grow to be a megacity with a population of more than one crore. Given the enormous growth rates (a decadal growth rate of 4.71% between 2001 and 2011) and the reality that the urban infrastructure cannot even adequately meet the needs of the population today. The physical aspects of the city, such as infrastructure, transportation, industrial development, and environment, as well as the social and economic aspects, are all changing quickly. The environment and natural resources have been put under a great deal of stress as a result of Hyderabad's rapid and unchecked or only partially controlled urban growth, especially water resources in terms of quantity and quality of surface and groundwater bodies. Urban communities in the city have some development plans, but the government hasn't passed many rules or regulations to govern or control them. The water resources of this region have been negatively impacted by changes in land use and human environmental modification.

Water scarcity in Hyderabad city is one of the major issues for sustainable development. Due to the unprecedentedly rapid pace of urbanization and its associated social and environmental effects, the problem of urban sustainability is quickly becoming a significant one. The lifestyle of the urban population places a heavy demand on natural resources, which are exploited and being depleted at a very quick rate to provide the housing and other basic necessities of a population that is constantly expanding and demanding. However, the drive for

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[13]Alam, Shah Manzoor, and Kalpana Markandey. "Consequences of unplanned growth: A case study of metropolitan hyderabad." In *Urban and Regional Planning and Development*, pp. 203-219. Springer, Cham, 2020.

satisfyingly altering consumer behavior will have a detrimental impact on the environment, which will eventually cause a decline in the standard of living for people. Due to the rapid rates of urbanization and industrialization, Hyderabad's lakes, which were clean and a source of drinking water for the city until the 1930s, progressively changed into a place where sewage and industrial effluents discharged into the Nalla from its watershed area.

This event caused the city's residents' access to clean drinking water to be contaminated and scarce. In the study area, air pollution from vehicular smoke and water pollution from urban blight are both fairly prevalent issues. Participants believed that as people migrate toward urban areas, it poses a very real threat to all of us. Residents are becoming increasingly concerned about finding clean drinking water because there is no guarantee that the water from local resources, including the so-called springs, is pure.[14]

The rivers' water is now polluted, and as a result, there are numerous health dangers. Due to the impurity and pollution of the water, as well as the numerous infections that occur during the heavy rain and flood seasons, many people are suffering from diseases like kidney failure and gastrointestinal issues. Since the current situation has compromised the sustainability of urban and community development in Hyderabad city, resilient urban development requires a sustainable, safe, and clean water supply as well as sustainable environmental development.

FINDINGS

The research finding shows that Hyderabad is enlisted as one of the megacities of India with its fast-growing population. It imposes certain limitations and strains for resilient urban development and the UN-Sustainable Development Goals. According to the study, the city can provide only 40 per cent of the population with public transportation while there is a need for 70 per cent. Therefore, 30 per cent is deficient despite of Metro system in the city. In addition, there are concerns about water scarcity and contamination that need to be covered and resolved in Hyderabad's metropolis. These issues require additional attention. The current study underlined how urbanization, particularly unplanned urbanization, has impacted human life in many ways, particularly housing settlement, which is a significant issue given the city's burgeoning

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[14]Rashid, Hassan, Malik Maliha Manzoor, and Sana Mukhtar. "Urbanization and its effects on water resources: An exploratory analysis." *Asian Journal of Water, Environment and Pollution* 15, no. 1 (2018): 67-74.

population and high demand for housing and facilities. River water pollution is a result of urbanization and population growth in cities, and underground water resources are also polluted by sewage pipe leaks and other commercial and industrial wastes.

CONCLUSION

Hyderabad is a city with a rapidly growing population that will be a megacity, with more than ten million inhabitants by 2030. Such swift urban growth can create several challenges and undermines resilient urban development. On the other hand, the urbanization process has increased the demand for available water, housing and urban environmental issues for city dwellers. This scenario undermines sustainable urban development goal number 11 and prevents the authority to reach the objectives of goal number 11 till the end of 2030.

There is an urgent requirement and attention to the water scarcity in the city which is a burdening challenge nowadays. Moreover, water contamination and pollution are burden issues for the residents of Hyderabad city which needs to be into account. In addition, the issue of transportation is another one which every year there is an increase in the number of vehicles in the city, confronting the dwellers with traffic congestion as well as air and sound pollution.

The study suggests that investing in public transportation is essential to address the issue of public transportation on the one hand and the issue of renovation, enlargement and building roads, and transportation networks, on the other hand, to address all these issues about the urban areas of Hyderabad with regards to urban sustainable development, such as transportation, air pollution, water pollution, and its scarcity.

The first and most crucial measures in addressing the water issue are water body conservation, preservation, and restoration. Hyderabad is known as the city of lakes in the nation, thus cleaning and restoring the city's lakes might be very beneficial and prevent the groundwater from becoming contaminated and being utilized as drinking water. The reuse and recycling of wastewater, which may be feasible shortly as the city develops into a megacity in the nation, could be the second most important method of addressing the aforementioned challenges in the Hyderabad metropolitan area. The third way of tacking that the present study would suggest could be the recharge of groundwater and rainwater harvesting to augment water supply and fight drought in most parts of Telangana's urban and periurban areas, particularly the Hyderabad urban area.

REFERENCES

1. Alam, Shah Manzoor, and Kalpana Markandey. "Consequences of unplanned growth: A case study of metropolitan hyderabad." In Urban and Regional Planning and Development, pp. 203-219. Springer, Cham, 2020.

2. Gupta, Anil K., Swati Singh, Mahak Agarwal, Nivedita Mani, and Shiraz A. Wajih. "Peri-urban ecosystems and urban resilience: training modules, instructions and reference materials." (2021).

3. Alam, Shah Manzoor, and Kalpana Markandey. "Consequences of Unplanned Growth: Metropolitan Hyderabad as a Case Study." Planning and development for urban and regional areas, pp. 203-219. Springer, Cham, 2020.

4. 1Ibid.

5. Paul, Bâc Dorin. "A history of the concept of sustainable development: Literature review." The Annals of the University of Oradea, Economic Sciences Series 17, no. 2 (2008): 576-580.

6. Paul, Bâc Dorin. "A history of the concept of sustainable development: Literature review." The Annals of the University of Oradea, Economic Sciences Series 17, no. 2 (2008): 576-580.

7. Paul, Bâc Dorin. "A history of the concept of sustainable development: Literature review." The Annals of the University of Oradea, Economic Sciences Series 17, no. 2 (2008): 576-580.

8. New Urban Agenda, 2017

9. New Urban Agenda, 2017.

10. https://worldpopulationreview.com/world-cities/hyderabad-population/ Retrieved on.

11. Sheth, Amey Z., Nagendra R. Velaga, and Andrew DF Price. "Slum rehabilitation in the context of urban sustainability: a case study of Mumbai, India." (2009).

12. https://www.siasat.com/government-paying-no-attention-to-situation-in-slums-during-covid-times-1927530/Retrieved 2022.

13. https://www.researchgate.net/publication/348836300_SLUMS_OF_HYDERABAD_A_SPATIO_-TEMPORAL_ANALYSIS/Retieved 2022.

14. Rashid, Hassan, Malik Maliha Manzoor, and Sana Mukhtar. "Urbanization and its effects on water resources: An exploratory analysis." Asian Journal of Water, Environment and Pollution 15, no. 1 (2018): 67-74.

15. Naidu, Ratna. "A STUDY OF SLUMS IN HYDERABAD—SECUNDERABAD." *Indian Journal of Social Work* 39, no. 3 (1978): 297-312.

16. Kranthi, Natraj, and Kavita Daryani Rao. "Security of tenure and protection against evictions of slum dwellers: a case of Hyderabad." *Institute of Town Planners India Journal* 7, no. 2 (2010): 41-49.

17. https://www.globalgoals.org/goals/11-sustainable-cities-and-communities/?gclid=CjwKCAiA7IGcBhA8EiwAFfUDseYljMtvfYVs1v RmWEbu185V5-WfD4s_9LLREmJO7L0SQv2f_AlUTxoC-n4QAvD_BwE/Retrieved 2022.

18. Census of India (2011a). Size, Growth Rate and Distribution of Population. Available at: http://www.censusindia.gov.in/2011-provresults/data files/India/Final%20PPT%202011_chapter3.pdf.

19. Census of India (2011b). Provisional Population Totals: Urban Agglomerations and Cities. Government of India. Available at: http://censusindia.gov.in/2011-prov-results/paper2/data_files/India2/1.%20Data%20Highlight.pdf.

20. Chandramouli, C. (2011). Census of India 2011: Rural Urban Distribution of Population. Registrar General & Census Commissioner, India Ministry of Home Affairs New Delhi: 15th July 2011. Presentation available at: http://censusindia.gov.in/ 2011-prov-results/paper2/data_files/india/Rural_Urban_2011.

CURRENT TEACHER EDUCATION INSTITUTIONS IN EASTERN REGION: SPECIAL PREFERENCE TO WEST BENGAL

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ABSTRACT

Today teacher education is very emerging issue in INDIA. Day to day we are realise importance of teacher education institutions. Because we shift to new concept that teacher are made not born (old concept). We all know that teachers are made in teacher education institutions. So we have to know first that how many teacher education institutions are present in our country. **NCTE** (National Council for Teacher Education) is the parent of teacher education institutions of the INDIA. NCTE divided teacher education institutions of INDIA into four regions (Eastern Region, Western Region, Northern Region and Southern Region). This paper study that duration of the courses (B.Ed., M.Ed., D.El.Ed., INTEGRATED B.Sc.-B.Ed./ B.A.- B.Ed.,B.Ed. ODL MODE, INTEGRATED B.Ed.-M.Ed.), which state present in which region according to NCTE division, in eastern region the number of teacher education institution (B.Ed., M.Ed., D.El.Ed., Integrated B.Sc.-B.Ed./ B.A.- B.Ed., B.Ed. ODL MODE, INTEGRATED B.Ed.-M.Ed.) are present state wise, and lastly how many B.Ed. & M.Ed. colleges are present in West Bengal (district wise).

KEY WORDS: NCTE.

INTRODUCTION:

According to **Swami Vivekananda "Education is a light that shows mankind the right direction to surge."** We are educated by our teachers. Destiny of nation depends on teachers, and we all know that teachers are not born (old concept), they are made by teacher educators in the teacher education institution. So teacher education institution is the blood of the nation. In INDIA, NCTE

(National Council for Teacher Education) is the parent of all teacher education institutions. NCTE established on 1971, NCTE act comes on 1993 and NCTE becomes autonomous from 1995. **teacher education**, any of the formal programs that have been established for the preparation of teachers at the elementary- and secondary-school levels.

While arrangements of one kind or another for the education of the young have existed at all times and in all societies, it is only recently that schools have emerged as distinctive institutions for this purpose on a mass scale, and teachers as a distinctive occupational category. Parents, elders, priests, and wise men have traditionally seen it as their duty to pass on their knowledge and skills to the next generation. As Aristotle put it, the surest sign of wisdom is a man's ability to teach what he knows. Knowing, doing, teaching, and learning were for many centuries—and in some societies are still today—indistinguishable from one another. For the most part the induction of the young into the ways of acting, feeling, thinking, and believing that are characteristic of their society has been an informal—if serious and important—process, accomplished chiefly by means of personal contact with full-fledged adults, by sharing in common activities, and by acquiring the myths, legends, and folk beliefs of the culture. Formal ceremonies, such as the puberty rite, marked the point at which it was assumed that a certain range of knowledge and skill had been mastered and that the individual could be admitted to full participation in tribal life. (Residual elements of such ceremonies remain in some modern arrangements; it has been seriously contended that the study of the Latin language in the Renaissance and post-Renaissance school can be interpreted as a form of puberty rite.) Even in the formally established schools of the Greek city-states and of the medieval world there was little separation between, on the one hand, the processes of organizing and setting down knowledge and, on the other, those of teaching this knowledge to others.

This does not mean, however, that prior to the 19th century little attention was given to a training in teaching methods as distinct from "subjects." The great works of medieval scholasticism were essentially textbooks that were designed to be used for the purpose of teaching. Today, as in the medieval world, methods of teaching and the organization of knowledge continue to be reciprocally influential. Nor are the problems that today surround the qualifications and certification of teachers wholly new. State, church, and local authorities everywhere have long recognized the importance of the teacher's work in maintaining or establishing particular patterns of social organization and systems

of belief, just as radical and reformist politicians and thinkers have looked to the schools to disseminate their particular brands of truth. In medieval and post-Reformation Europe, for example, there was considerable concern with the qualifications and background of teachers, mainly but not entirely with reference to their religious beliefs. In 1559 Queen Elizabeth I of England issued an injunction that prohibited anyone from teaching without a license from his bishop. The license was granted only after an examination of the applicant's "learning and dexterity in teaching," "sober and honest conversation," and "right understanding of God's true religion." Thus the certification of teachers and concern for their character and personal qualities are by no means new issues.

What is new for most societies—European, American, African, and Asian—is the attempt to provide a substantial period of formal education for everyone and not just for the small proportion of the population who will become political, social, and religious leaders or for those few who possess surplus time and money for the purpose. Universal literacy, already achieved in most European and American and many Asian societies, has become the goal of all. In an increasing proportion of countries every child now proceeds automatically to secondary education; many remain at school until 16 or 18 years of age, and large numbers go on to some form of postsecondary education and training. The scale and variety of educational provision that all this requires makes the supply, education, training, and certification of an adequate number of teachers a worldwide issue of education policy and practice. In developed and developing countries alike, no factor is of greater importance in relation to the quantity and quality of education; it is significant that a substantial proportion of the budget of the United Nations Educational, Scientific and Cultural Organization (UNESCO) is devoted to the improvement of teacher preparation.

The term "teacher" in this article is used to mean those who work in schools providing education for pupils up to the age of 18. Thus, "teacher education" refers to the structures, institutions, and processes by means of which men and women are prepared for work in elementary and secondary schools. This includes preschool, kindergarten, elementary, and secondary institutions for children from the age of two or three to 18.

The evolution of teacher education

Teacher education, as it exists today, can be divided into two stages, preservice and in-service. Preservice education includes all the stages of education and training that precede the teacher's entry to paid employment in a school. In-

service training is the education and training that the teacher receives after the beginning of his career.

Systematic training was linked to an equally systematic process of certification, control of teaching conditions, and in-service study. All public teachers were required to attend a series of meetings to extend their practical knowledge. Parochial conferences took place monthly in the winter, district conferences bimonthly in the summer, a circle conference twice a year, and a departmental conference annually. Each seminary was responsible for maintaining contact with all the teachers working within a six-mile radius, and some established "repetition courses" for experienced teachers who wanted to refresh and add to their knowledge.

COURSES OF TEACHER EDUCATION INSTITUTIONS:

There are so many courses are present in teacher education institutions, they are B.Ed., M.Ed., D.El.Ed., Integrated B.A. B.Ed./ B.Sc. B.Ed., B.Ed.(ODL Mode), Integrated B.Ed. M.Ed. etc. Now we discuss about courses and duration of those courses in below....

SERIAL NO.	COURSE NAME	DURATION (IN YEARS)
1.	B.Ed.(Bachelor of Education)	2 YEARS
2.	M.Ed.(Master of Education)	2 YEARS
3.	D.El.Ed.(Diploma in Elementary Education)	2 YEARS
4.	Integrated B.Sc. B.Ed./ B.A. B.Ed.	4 YEARS
5.	B.Ed. (ODL mode)	2 YEARS
6.	Integrated B.Ed.M.Ed.	3 YEARS

DIVISION OF TEACHER EDUCATION INSTITUTION (REGION WISE) IN INDIA:

INDIA is a very big country, so NCTE divided teacher education institution all over the INDIA into four regions.

1. Eastern Region (Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim, Tripura and West Bengal).

2. Western Region (Chattisgarh, Gujrat, Madhya Pradesh, Maharashtra, Dadra and Nagar Haveli and Daman and Diu).

3. Northern Region (Chandigarh, Delhi, Hariyana, Himachal Pradesh, Punjab, Rajasthan, Uttar Pradesh and Uttaranchal).

4. Southern Region (Andhra Pradesh, Karnataka, Tamil Nadu, Andaman & Nicobar Islands, Lakshadweep, Pondicherry and Kerala).

All over the INDIA there are so many teacher education institutions present, but here we discuss only Eastern Regions teacher education institutions.

EASTERN REGIONS TEACHER EDUCATION INSTITUTIONS:

Eastern Regions consists of twelve states of INDIA including our West Bengal. The states names are given below.....

i) Arunachal Pradesh

ii) Assam

iii) Bihar

iv) Jharkhand

v) Manipur

vi) Meghalaya

vii) Mizoram,

viii) Nagaland

ix) Orissa

x) Sikkim

xi) Tripura

xii) West Bengal

Now we see the current number of teacher education institutions (B.Ed., M.Ed., D.El.Ed., and Integrated B.A. B.Ed./ B.Sc. B.Ed.,Integrated B.Ed.-M.Ed., B.Ed. ODL Mode) in this twelve states of eastern region.

SERIAL NO.	STATE NAME	B.Ed.	M.Ed.	D.El.Ed.	4 YEAR INTEGRATED B.Sc.-B.Ed./B.A.-B.Ed.	INTEGRATED B.Ed.-M.Ed.	B.Ed. (ODL MODE)
1.	Arunachal Pradesh	13	2	8	4	0	0
2.	Assam	74	7	60	2	0	0
3.	Bihar	340	24	295	4	0	4
4.	Jharkhand	135	14	93	3	1	0
5.	Manipur	14	2	11	0	0	0
6.	Meghalaya	6	1	11	0	0	0
7.	Mizoram	5	2	10	0	0	0
8.	Nagaland	9	2	4	0	0	0
9.	Odisha	38	7	68	7	4	1
10.	Sikkim	3	2	4		0	0
11.	Tripura	8	1	6	1	0	2
12.	West Bengal	636	24	626	9		1
	TOTAL	1281	88	1196	30	5	8

N.B.: Updated up to 255th ERC Meeting held on 30th April to 2nd May, 2018.

So we see that in the eastern regions 49.65% B.Ed. colleges, 27.3% M.Ed. colleges, 52.34% D.El.Ed. Colleges, 30% Integrated B.Sc.-B.Ed./ B.A.-B.Ed. colleges present in only West Bengal.

DISTRICT WISE B.Ed. COLLEGES IN WEST BENGAL:

We discuss number of B.Ed. and M.Ed. colleges only 19 district of West Bengal (excluding Alipurduar, Kalimpong, Paschim Bardhaman,and Jharagram) in a table.

SERIAL NO.	DISTRICT NAME	NO. OF B.Ed. COLLEGE	NO. OF M.Ed. COLLEGE
1.	Darjeeling	8	0
2.	Jalpaiguri	13	1
3.	Cooch Bihar	7	0
4.	Uttar Dinajpur	23	0
5.	Dakshin Dinajpur	18	1
6.	Malda	35	0
7.	Birbhum	51	1
8.	Murshidabad	104	1
9.	Bardhaman	48	3
10.	Nadia	51	1
11.	Purulia	12	0
12.	Bankura	32	0
13.	Hoogly	31	0
14.	North 24 Parganas	49	3
15.	South 24 Parganas	30	1
16.	Pashchim Medinipur	46	2
17.	Purba Medinipur	39	3
18.	Howrah	22	3
19.	Kolkata	19	4

N.B.: Updated up to 255th ERC Meeting held on 30th April to 2nd May, 2018.

In West Bengal maximum number of colleges is present in Murshidabad (105), Birbhum (52), North 24 Parganas (52), Bardhaman (51) and Purba Medinipur (42) and minimum number of colleges is present in Cooch Bihar (7), Darjeeling (8), Purulia (12) and Jalpaiguri (14).

CONCLUSION:

So in this paper we see NCTE divided teacher education institution into four regions (Eastern, Western, Northern, Southern). West Bengal present in Eastern Region. Maximum number of teacher education institutions of Eastern Region

are present in West Bengal (49.65% B.Ed. colleges, 27.3% M.Ed. colleges, 52.34% D.El.Ed. colleges, 30% Integrated B.Sc.-B.Ed./ B.A.-B.Ed.). In West Bengal maximum number of colleges is present in Murshidabad (105), Birbhum (52), North 24 Parganas (52), Bardhaman (51) and Purba Medinipur (42) and minimum number of colleges is present in Cooch Bihar (7), Darjeeling (8), Purulia (12) and Jalpaiguri (14). Actually we are good planner, but not executer. Now teacher education institution increases day to day. We have to focus not origination of new teacher education institution; we all know increases of quantity not means increases of quality, so we have to focus not on increases of quantity of teacher education institutions but how we increase their quality.

REFERENCES:

Mohan, R. (2011). *TEACHER EDUCATION*. Delhi: PHI PUBLICATION.

Vivekananda, S. (2010). *My Idae of Education*. Hollywood: Vedanta Press.

http://ncte-india.org/ncte_new/?page_id=803

http://www.ercncte.org erc@ncte-india.org

PROSPECTIVE ROLE OF MATHEMATICS TEACHERS' IN UNDERSTANDING OF DERIVATIVE ACROSS REAL LIFE IN LEARNING AND TEACHING PROCESS

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ABSTRACT

A successful institution is built upon productive teachers who utilize their knowledge talents creativity skills and aptitude to the best of their abilities for the overall development of institution. This study investigates prospective secondary school mathematics teachers' developing conceptions about the meaning of derivative as rate of change while working on a series of tasks involving different non-motion real-life contexts. The study was conducted by employing a case study method. The participants of the study were 45 prospective secondary school mathematics teachers enrolled in mathematics teaching methods course. A series of contextual tasks involving different real-life situations about derivative was designed and implemented in the form of problem based learning as a regular part of the course. Pre and post questionnaires written group solutions to the tasks individual reflection papers and video recorded online classroom discussions were the data sources. A constant comparative analysis method was employed in analyzing the data. The results showed that prospective teachers have difficulties in interpreting the meaning of derivative in different real life contexts. While they were frequently using amount of change and slope interpretations they started to use rate of change interpretation. However the classroom discussions showed that most of the prospective teachers were using the rate of change expression as a memorized term without engaging in its contextual meaning. Some inferences required about the teaching and learning of derivative and the professional development and needs of the teachers.

Key words: Prospective Role, Derivative, Mathematics Learning, Teaching Process.

INTRODUCTION

Making education compulsory or even declaring it to be a fundamental right however may not ensure that the child attending the school will profit from it unless of course there is meaningful quality education. The responsibility of providing quality education rests with the teacher. A teacher who is committed competent with knowledge and skills and is aware of his social responsibilities tasks and functions will contribute to the realization of goals making education compulsory. Therefore the teachers have great responsibility in molding the character of children by giving quality education in the school (Qaisur, 2021). The performance of good teacher depends upon the specialization of the subject or fields to be taught and professional knowledge and skill and an understanding of teaching process and learning skills. In order to equip the teachers with these abilities teacher education programmes are offered in various places. The rate of change as one of the central ideas in the secondary school of mathematics curriculum which is the most inclusive interpretation of derivative for conceptual understanding of calculus concepts (Bezuidenhout, 1998; Byerley and Thompson, 2017; Thompson, 1994a, 1994b; Herbert and Pierce, 2011). The co-ordinated understanding of many big ideas involving variable function co-variation, ratio and rate is required for a coherent understanding of the rate of change (Byerley, 2019). However the rate of change interpretation of derivative is generally ignored or not extensively addressed with the required quantitative meanings in the curricular documents and text books (Berry and Nyman, 2003; Byerley and Thompson, 2017; Teuscher and Reys, 2012). Many researchers have reported that students or mathematics teachers have various conceptual difficulties in understanding derivative and rate of change (Feudel, 2018; Herbert and Pierce, 2012; Mkhatshwa and Doerr, 2018; Teuscher and Reys, 2012). Derivative and rate of change concepts have a large spectrum of application areas in a variety of non-kinematic science and engineering contexts (Jones, 2017). However over dependence on motion context distance-time or velocity-time graphs is observable in curricular materials and in class practices of teachers in introducing the rate of change (Berry and Nyman, 2003; Herbert and Pierce, 2008; Jones, 2017; Wilhelm and Confrey, 2003). Therefore students have difficulties in transferring their ways of reasoning about the rate of change across different non-motion contexts (Bektash and Çakmakh, 2011; Doorman and Gravemeijer, 2009; Herbert and Pierce, 2012; Jones, 2017; Zandieh, 2000; Zandieh and Knapp, 2006). Thompson (1994b) and Jones (2017) emphasize the use of contexts involving simultaneously changing non-temporal quantities in

addition to kinematic concepts to support students' understanding of the rate of change. In the study by (Wilhelm and Confrey 2003) Algebra-I students had difficulties in projecting their understanding of the rate of change in motion context to Account context and the researchers voiced the necessity of using multiple contexts in teaching. Similarly the studies by (Herbert and Peirce 2011, 2012) also showed the inconsistencies in students' understanding of the rate of change across different mathematical representations and different real-life contexts of the professional commitment in education of the modern term in recent years. Teaching profession had its roots in missionary works in ancient times. This emphasized the need for quality teacher education in terms of competency based on commitment oriented teacher education. It is presumed that if teachers acquire professional competencies and commitment it will result better performance. In the functional sense professional commitment on the part of teacher educators essentially consists not only on doing their best for introducing teacher trainees to the competencies and they would need as teachers in schools but also particularly inspiring them to inculcate values towards the profession of teaching (Qaisur, 2021). The performance in these two areas world requires that the teacher educators that are well equipped for it and well oriented motivated to achieve the desired results. It is believed that satisfaction at work may influence various aspects of work such as efficiency productivity absenteeism.

The research studies commonly indicate the need for devising new tasks contextualized in multiple areas for advancement of the students' coherent and understanding of rate of change. To do that there is a need for more research studies proposing effective teaching practices supported by well-designed sample activities contextualized in novel situations. Over reliance on the motion context while teaching derivative and the resulting student difficulties may also be related to teachers' ways of knowing (Byerley and Thompson, 2017). Prospective and in-service teachers can be supported in realizing the meaning of derivative and rate of change specifically in non-motion contexts. However there is little research on describing and supporting prospective or in-service teachers' understanding of derivative. At this point because it is a critical factor for students' ways of forming mathematical conceptualization of teachers' understanding in derivative and supporting their professional knowledge seems to be important (Byerley and Thompson, 2017; Teuscher and Reys, 2012). This seems important in terms of improving teachers' knowledge of derivative which will go along with an increase in students' understanding of this concept in the

future. In this study it shows prospective mathematics teachers' (PST) developing conceptions of change across a series of tasks involving non-kinematic contexts.

PROSPECTIVE ROLE OF MATHEMATICS TEACHERS'

A wide range of research towards students' understandings of change from various aspects including   first overdependence on the motion context and difficulties in interpreting the change in non-kinematic contexts (Doorman and Gravemeijer, 2009; Herbert and Pierce, 2008; Jones, 2017; Wilhelm and Confrey, 2003) second conceiving it as an amount of change (Rowland and Javanoski, 2004; Mkhatshwa and Doerr, 2018) third difficulties in forming connections among different interpretations such slope and difference quotient (Byerley and Thompson, 2017; Herbert and Pierce, 2008; Zandieh, 2000) and the fourth difficulties arising from a lack of quantitative and co-variation reasoning (Thompson, 1994a, 1994b; Thompson and Carlson, 2017). The students' level of understanding the derivatives in non-kinematic context such as rate cost revenue and profits by (Feudel, 2016; 2017; 2018; Jones, 2017; Mkhatshwa, 2018; 2020; Mkhatshwa and Doerr, 2016; 2018). The study of (Mkhatshwa, 2018) evidenced that business calculus students did not see marginal change as a rate in the form of a difference quotient rather they saw it as an amount of change difference in only one quantity. In the following study (Mkhatshwa and Doerr 2018) reported that business calculus students had difficulties in discriminating and interpreting the quantities of the total cost total profit marginal cost and marginal profit. Similar results were reported in the studies by (Feudel, 2017, 2018) investigating calculus students' understanding of derivative in the context of economics. According to (Mkhatshwa, 2018) as the denominator is equality of the numerical values for the difference quotient rate and the difference amount of quantities is the main source of this difficulty. This is also pointed out by (Cooney, *et al.,* 2010), in a way that thinking with one-unit increment in the independent variable provides students with a great amount of information about the rate of change just by looking at the change in the dependent variable. Similarly (Jones 2017) reported that while working on non-kinematic contexts calculus students the forced to use co-variation reasoning and saw the derivative value as an amount quantity not as a rate and invoked time as an independent variable although it is not explicitly stated. Similar findings were emphasized the need for teaching derivative and rate of change within diverse contexts (Jones and Watson, 2018; Zandieh, 2000).

Research also shows that student difficulties with the concept of rate of change can be related to their lack of quantitative and co-variation reasoning (Kertil *et al.,* 2019; Carlson *et al.,* 2002; Thompson and Carlson, 2017; Cooney *et al.,* 2010; Castillo-Garsow, 2012; Confrey and Smith, 1994; Byerley and Thompson, 2017; Thompson, 1994a, 1994b). Students' conceptions of quantities variation in one quantity and co-variation between quantities and being able to see all these in a unit of structure is critical for conception of rate (Thompson, 1994b; Thompson and Carlson, 2017). Conceiving rate of change as an amount of change in one quantity as many students and teachers demonstrated is seen as the result of lack of co-variation reasoning (Bezuidenhout, 1998; Thompson and Carlson, 2017; Cooney *et al.,* 2010; Zandieh, 2000). Thompson (1994-b) offered the use of non-temporal contexts in developing students' conceptions of the relationship between quantities. As supportive of this argument (Jones 2017) recently evidenced how using tasks involving non-kinematic contexts forced students to attend to each quantity and so to use co-variation reasoning while thinking on the rate of change.

Teachers have similar difficulties as students regarding the concept of derivative. However compared to the number of studies conducted with secondary or undergraduate level students there are relatively few studies focusing on describing or supporting mathematics teachers' knowledge of derivative and rate of change (Akkoç *et al.,* 2008; Byerley and Thompson, 2017; Duran and Kaplan, 2016; Gokcek and Acikyildiz, 2016; Rodriguez-Nieto *et al*., 2021; Yoon *et al.,* 2015). Akkoç *et al.,* (2008) investigated the developments in one prospective teachers' content knowledge during a technology enriched workshop and they reported enrichment in conception of derivative as an instantaneous rate of change in a real life context. In a recent study on 251 in-service high school mathematics teachers Byerley and Thompson (2017) showed that the majority of teachers' understanding of slope and rate of change was formulaic and procedural. Only a small percent of them could demonstrate an understanding of rate of change as a new quantity obtained from the multiplicative comparison between two changes or relative sizes. It strongly emphasized the need for professional development support for in-service or pre-service mathematics teachers regarding the topic of rate of change.

UNDERSTANDING OF DERIVATIVE ACROSS REAL LIFE

Zandieh (2000) introduced an analytical frame work for describing a conception of derivative. According to this two dimensional frame work the horizontal dimension involved contexts or representations involving slope of a tangent line

rate of change speed or velocity and symbolic limit of the different quotient. The vertical dimension involves ratio limit and function layers for analyzing a students' understanding at each representation level. In this study we specifically focused on the rate of change interpretation at the horizontal dimension but we also considered PSTs' transitions and fluency between different representations. We used Thompson's (1994b) theory of quantitative reasoning in describing PSTs' understanding of derivative as a rate of change. Quantitative reasoning theory discriminates between the basic terms of quantity quantification quantitative operation numerical operation. According to Thompson (1994b, 2011) quantities are attributes of objects conceived in situations and quantification involves conceptualizing an object and measuring its quality. The quantitative operations are mental operations by which a new quantity is conceived while numerical operations are used to evaluate those newly constructed quantities.

The concept of derivative involves different but connected interpretations such as rate of change slope and difference quotient. From the quantitative reasoning perspective rate of change is an intensive quantity obtained as a result of the multiplicative comparison of changes in two simultaneously changing quantities (Thompson, 1994b). Rate of change is an abstract quantity that can be conceived first as fastness and can be conceptualized as the multiplicative comparison of two extensive quantities distance and time and measured by using the numerical operation of division. According to (Thompson and Carlson 2017) a conception of rate of change requires conceptualizations of ratio quotient co-variation quantity and proportionality. Additionally the reasoning has been emphasized as being critical for a mature understanding of rate of change (Kertil *et al.,* 2019; Thompson and Carlson, 2017). However (Saldanha and Thompson (1998) defined co-variation reasoning as holding in mind a sustained image of two quantities' values simultaneously. Rate of change is a new quantity obtained as the result of the multiplicative comparison of two quantities relative size and so the three quantities form a quantitative structure quantity-1 and quantity-2 as result of multiplicative comparison (Thompson, 2011). Without reasoning students can see derivative as an amount of change in only one quantity (Byerley and Thompson, 2017). In the current study we benefited from quantitative reasoning theory in describing PSTs conceptions of derivative across different real-life contexts. Quantitative reasoning theory emphasizes understanding and transferring of mathematical concepts across different contexts as it emerges with one's comprehension of situations in terms of the quantities involved and

the relationships between them. Although rate of change is an interpretation of derivative in this study we used derivative and rate of change concepts interchangeably as we asked about the contextual meaning of derivative across the tasks.

METHODS

In this study, the case study method was employed which includes the in-depth analysis of a group of PSTs within its phenomenological bounds (Yin, 2011). PSTs' ways of reasoning on a series of contextual tasks about derivative and rate of change during their individual written solutions or in group works were the unit of analysis.

SAMPLE

The participants in this study were 45 senior PSTs enrolled in a secondary mathematics teacher preparation program at the university. The study was conducted as a regular part of the mathematics teaching methods-II course which was carried out online because of the restrictions of the pandemic. Regarding the content and pedagogical content knowledge background of the PSTs all of them completed the fundamental mathematics courses such as calculus-1 calculus-2 and linear algebra as well as a mathematics teaching methods-I course.

SELECTION AND INTERVENTION OF THE TASKS

In the study four tasks about derivative were designed by researchers. All the real life contexts used in the tasks were selected from non-motion contexts. PSTs were provided with tabular data and asked to find an approximate derivative value at a point. The fourth task was about the filling bottle context adapted from the study of (Kertil and Kupcu, 2021). In this task PSTs were provided a picture of a conical bottle with its dimensions and they were asked to interpret the volume as a function of the radius of cross-sections and volume as a function of height. In each task PSTs were asked to interpret the meaning of derivative in the given context. Additionally they were asked to interpret the long term behaviour of the function and its derivative. All the tasks, except the population, were selected from non-temporal contexts. An overreliance of students and PSTs on algebraic formulas and algebraic procedures about derivative concept has been reported in the literature (Berry and Nyman, 2003; Gokcek and Acikyildiz, 2016). Therefore we did not provide any formula for the functions in any of the tasks to see PSTs' ways of reasoning about derivative in different contexts without algebraic formulas.

The tasks were implemented sequentially in the form of group and class room discussions. As the course was instructed online because of the pandemic situation and were designed in the Desmos web-based activity builder platform. Each task was assigned to PSTs via class room code constructed in the Desmos two days before the class hour. PSTs were asked to solve the tasks with their group mates. All of the 8 groups were asked to work on the tasks altogether by using an online platform (Zoom, Skype). They submitted their group answers via the Desmos platform before the class hour. The instructor one of the authors of this paper analyzed the answers before the class and he specified the sample solutions to share with the class during the class room discussion. These solutions were selected carrying out some properties as uniqueness involving a different way of reasoning or representing a common way of reasoning. During the class room discussions PSTs had an opportunity to present and explain their ways of reasoning. The class room discussions were carried out and recorded on Zoom online teaching platform and lasted three weeks about 8 class-hours.

DATA ANALYSIS

In this study we benefited from multiple data sources that are pre and post questionnaires written group reports video-recorded class discussions and reflection papers. In the beginning a questionnaire including two open ended questions was administered to see PSTs' background knowledge about the definition and contextual meaning of derivative. The same questionnaire was administered after the implementation of the tasks. The second data source was the written group reports of PSTs about each task. Another source of data was video-recorded classroom discussions by which we could reach the details of PSTs' ways of reasoning. Finally after the implementation of all tasks PSTs were asked to write a reflection paper individually for evaluating the discussions on the tasks and their learning outcomes. A constant comparison method was used in analyzing the data (Strauss and Corbin, 1998). The data analysis was started with the questionnaire administered one week before the intervention. In the pre- and post-questionnaires based on PSTs written explanations their understanding of derivative was analyzed according to the coding scheme. Examples of real-life contexts provided by PSTs were categorized and analyzed according to the attributes of the variables as temporal or non-temporal. The written group solutions and class room discussions for each of the tasks were also analyzed according to the coding scheme. The written reports were analyzed by focusing on the meanings of verbal expressions or other mathematical representations.

The analysis of reflection papers informed us about PSTs' self-evaluation of their development at the subject matter knowledge level.

RESULTS

In this section the descriptive data about PSTs' explanations about the meaning of derivative and the real-life examples that they provided in pre- and post-questionnaires. Later we followed with reporting PSTs' ways of reasoning that they demonstrated during the solution of each task and the whole class discussions findings obtained from their lesson plans and reflection papers. PSTs emphasized more than one meaning of derivative in their explanations in pre and post questionnaires. This shows that amount of change was the most frequent conception of derivative that PSTs demonstrated in the pre-questionnaire. The percentage of explanations in which derivative was considered as the rate of change was only 23% before the intervention. After the intervention while the amount of change conception decreased to 19%, the rate of change conception increased to 44% respectively. PSTs provided and continued to be difference quotient and slope of tangent line interpretations for the contextual meaning of derivative before and after the intervention. It shows PSTs ways of reasoning about derivative across the tasks. Although PSTs' explanations for the contextual meaning of derivative change according to the context the use of rate of change increased in their verbal explanations. As an overall picture the descriptive data indicates that the intervention involving a series of four tasks from different contexts about the meaning of derivative seems to have a limited impact on PSTs' making sense of derivative in non-temporal real-life contexts. In the following parts we will report data about PSTs' ways of thinking during the solution of each task supported with the instances from written solutions in class discussions and reflection papers.

Another outstanding result observed in this task was PSTs' insufficient knowledge about the cost-production context. Although most of the groups correctly interpreted the dependent and independent variables with their corresponding units in the given situation their lack of contextual knowledge was observed in their interpretations about the long-term behaviour of the cost-production function. While seven groups reported that the cost-production was an increasing function only one (G8) of the groups stated that nothing can be said about the long term behaviour of the cost production function. Only one group (G6) could report the cost function was increasing at a decreasing rate (in their terms cost increases decreasingly. Other groups either thought as if there was a linear relationship between cost and production (G3, G5) or they just

indicated the cost increases (G1, G2, G4, G7). The discussions on the behaviour of the cost product function took a long time. Most of the PSTs indicated that the long term behaviour of the cost product function cannot be known without its algebraic equation.

DISCUSSION

The National Policy of Education envisaged that the Districts Institute of Education and Training would play a leading role in improving the quality of teacher training in every district. It is being expected that the centres of innovations in teacher training and every teacher educator will be a practicing researcher. It is with this perspective that the adoption of a lab area. It was assumed that this will provide the teacher educators to get involved in empirical explorations and help them get an authentic understanding of the reality in which the schools function (Qaisur, 2021). It is expected that through these field explorations teacher educators would not only enrich their understanding but also contribute to innovations in the schools. Actual knowledge and skills transacted in the teacher training institutions lack authenticity. One can safely say that involvement in actual practice of school work and closer understanding of school practices through empirical researches is two sources of authentic knowledge on education a good teacher educator has to be either a practicing teacher or an active researcher. Enhancing the capabilities knowledge skills and attitudes as well as professional profiles are the key factors in achieving the goals of education of our nation (Qaisur, 2021). We investigated PSTs' understanding and ways of interpreting derivative in different real life contexts. We also analyzed if there were developments in PSTs' conceptions of derivative across different contexts as they engaged in working on a series of tasks employing group and in-class discussions. The results showed that PSTs had difficulties in interpreting the meaning of derivative in different non-motion contexts. While their explanations of derivative were frequently involving the amount of change at the beginning they started to use of rate of change in their verbal explanations. They got familiar with the rate of change expression while interpreting the contextual meaning of derivative. However it is difficult to say PSTs could be able to conceptualize the meaning of derivative as a new quantity in different contexts. As also observed in the study of (Byerley and Thomson 2017) PSTs seem to express rate of change without involving in-depth reasoning about its contextual meaning as a measure of relative size between the smoothly co-varying variables.

The findings of the current study are in line with the literature reporting student difficulties in interpreting the meaning of derivative in non-motion contexts (Doorman and Gravemeijer, 2009; Herbert and Pierce, 2008; Jones, 2017; Mkhatshwa and Doerr, 2018; Wilhelm and Confrey, 2003). In questionnaires PSTs examples of contexts for the concept of derivative were dominantly from the motion context but a relatively small increase in the diversity of contextual examples was observed by the post questionnaire. They also gave the meaning of derivative as velocity in the physics context to make a meaningful interpretation about the derivative of the cost-product function. Moreover PSTs did not interpret the derivative in the cost-product context as the economists' way of understanding marginal cost. The interesting point here was that although most PSTs conceived derivative as an amount change in cost as they did not interpret it as the cost added by producing one additional meter of production. PSTs had similar difficulties in interpreting derivative in population price-mileage, and volume height contexts. From the perspective of quantitative reasoning different real-life contexts require different ways of conceiving the variables and so of the derivative (Jones and Watson, 2018; Johnson, 2012).. Even if PSTs started to use the rate of change in their verbal expressions the need for supporting them in conceiving derivative as a new quantity with its meaning in the given context appeared. PSTs had difficulties in conceiving the derivative as a new quantity and attending to its meaning even though they used the rate of change expression in a memorized way. For example in the volume-height context derivative indicates the rate of change in volume as a function of height as also indicated by most of the PSTs but physically it also means the area of cross-sections. In the population context PSTs explained the rate of change as yearly population change and they did not conceive it as a rate as also observed in the study by Kertil (2017).

From the mathematical point of view, the marginal cost interpretation of derivative has some problematic aspects in terms of underestimating the infinite small differentiation (Feudel, 2016, 2017, 2018; Mkhatshwa and Doerr, 2016). It emphasizes a way of reasoning change in cost by one additional unit of product and may result in conceptualizing derivative as an amount of change as also observed in this study (Mkhatshwa, 2018; Mkhatshwa & Doerr, 2018). However the idea of marginal cost profit or revenue or per unit change can be used as a stepping stone for conceptualizing derivative as a relative size between two smoothly co-varying quantities if it can be supported with the use of the linear approximation method. The co-variation reasoning literature reports that this

way of reasoning may be enough to make true mathematical inferences about the concavity of function graph (Johnson, 2012; Thompson and Carlson, 2017) and it can easily be shifted to a relative size conception of the rate of change (Kertil *et al.,* 2019). In other words we can ask students to guess in the change of a dependent variable as a result of different small amounts of change in the independent variable other than 1 unit provided with a derivative value. We realized that PSTs need more practice for finding an approximate value of a function at a point without an algebraic formula based on its derivative value as we tried to do during class discussions. These practices seem to have the potential to provide students or PSTs with the meaning of derivative and rate of change. Although it was not a focused issue at the beginning of the study in the progress we also observed PSTs' lack of context knowledge concerning the mathematical functions. They drew for example linear or concave-up increasing graphs for cost-production context. And similarly they drew a linearly increasing graph for population context and a linearly decreasing graph for price-mileage context. The graphs and PSTs arguments about why they preferred to draw them indicated their lack of context knowledge not only in terms of derivative but also for functions. The knowledge about which functions can be used to model what kind of real life situations is an important indicator of students' or teachers' for mathematical modeling competencies or their level of mathematical literacy (Henning and Keune, 2007; Maab, 2006; Niss and Jensen, 2011). Lastly this study can be seen as an effort of searching for effective professional support for PSTs in developing conceptions of derivative across different real life contexts. The tasks used in this study were selected from different real life contexts but we only focused on the verbal or rate of change interpretation of derivative (Jones and Watson, 2018; Zandieh, 2000). We strongly suggest future intervention studies aiming at developing teachers' content knowledge of derivative covering its different representations with ratio limit and functions layers. The results of this study may also contribute to the awareness of the mathematics education community about the commonly lacking aspects of teachers' content knowledge resulting from the long term effect of their way of teaching and learning school mathematics. PSTs need long term experiences and practices for internalizing contextual meanings of mathematical concepts. Therefore the content of high school algebra or calculus courses curricular materials and text books in terms of the tasks problems and real-life contexts they have been presented with needs to be substantial reconsideration.

CONCLUSION

The superiority of any educational process mainly depends upon the excellence of teaching process and teacher. Though teaching is considered as a science and a skill, basically it is a transcendent art. It is the teacher who intuitively designs the emergent plastic mind of the child entrusted to him. Thus teaching is not a motorized process. Rather, it is a sophisticated rigorous and a very challenging one. With good leadership and correct teaching methodologies the teacher's efficacy can be enhanced. Challenges in Indian educational system have no permanent answers because of the variable nature and continuous demands of human society. The teachers in the modern era specifically 21st century will have to transact with a world different from past in respect of pedagogical and technological advancement. Since teachers are of fundamental importance in enlightening the quality of education hence the advancement of innovative practices in teacher education is of extreme importance. This method is designed to stimulate discussion on new ideas and innovative practices and learning process in students. Hence the teacher must be oriented about the various means of fostering the thinking skills of students and apply them according to their context and purpose. The study revealed that students have enjoyed the classroom experiences and the strategies enabled them to be responsible in the process of learning. Therefore such process can be made use of successfully in the class room to promote healthy learning environment and pleasurable learning experiences to the children.

REFERENCES

Akkoç, H., Bingolbali, E., and Ozmantar, F., (2008). Investigating technological pedagogical content knowledge: A case of derivative at a point. In: O. Figueras, J. L. Cortina, S. Alatorre, T. Rojano, & A. Sepúlveda, A. (Eds.), Proceedings of the Joint Meeting of PME 32 and PME-NA XXX (Vol. 2, Pp. 17-24). México: Cinvestav-UMSNH

Bektash, B., and Çakmakcl, G., (2011). Consistency of students' ideas about the concept of rate across different contexts. *Education and Science,* 36 (162): 273-287.

Berry, J. S., and Nyman, M. A., (2003). Promoting students' graphical understanding of the calculus. *Journal of Mathematical Behavior*, 22 (4): 481-497.

Bezuidenhout, J., (1998). First year university students' understanding of rate of change. *International Journal of Mathematical Education in Science and Technology*, 29 (3): 389-399.

Byerley, C., (2019). Calculus students' fraction and measure schemes and implications for teaching rate of change functions conceptually. *Journal of Mathematical Behavior*, 55: 100-694.

Byerley, C., and Thompson, P., (2017). Secondary mathematics teachers' meanings for measure slope and rate of change. *Journal of Mathematical Behavior*, 48: 168-193.

Carlson, M., Jacobs, S., Coe, E., Larsen, S., and Hsu, E., (2002). Applying co-variation reasoning while modeling dynamic events a frame work and a study. *Journal for Research in Mathematics Education,* 33 (5): 352-378.

Castillo-Garsow, C., (2012). Continuous quantitative reasoning. In: R. Mayes and L., Hatfield (Eds.) Quantitative reasoning and mathematical modeling: A driver for STEM integrated education and teaching in context Wisdom monograph (Vol. 2). Laramie, WY: University of Wyoming.

Cooney, T. J., Beckman, S., and Lloyd, G. M., (2010). Developing essential understanding of functions for teaching mathematics in grades Pp. 9-12. Reston, VA: National Council of Teachers of Mathematics.

Confrey, J., and Smith, E., (1994). Exponential functions rates of change and the multiplicative unit. *Educational Studies in Mathematics*, 26: 135-164.

Doorman, L. M., and Gravemeijer, K. P. E., (2009). Emergent modeling: discrete graphs to support the understanding of change and velocity. *ZDM*, 41 (1-2): 199-211.

Duran, M., and Kaplan, A., (2016). High school teachers pedagogical content knowledge on definition of derivative and relationship between derivative and continuity. *Journal of Education Faculty*, 18 (2): 795-831.

Feudel, F., (2016). Relevant knowledge concerning the derivative concept for students of economics: A normative point of view and students' perspectives. In: E. Nardi, C. Winslow, and T. Hausberger (Eds.), Proceedings of the first conference of International Network for Didactic Research in University Mathematics (Pp. 181-190). Montpellier, France: University of Montpellier and INDRUM.

Feudel, F., (2017). Students' interpretation of the derivative in an economic context. In: T. Dooley and G. Gueudet (Eds.), Proceedings of the 10th Congress of the European Society for Research In: Mathematics Education. Dublin, Ireland: DCU Institute of Education & ERME.

Feudel, F., (2018). Students' connections between the derivative and its economic interpretation in the context of marginal cost. In: V. Durand-Guerrier, R., Hochmuth, S. Goodchild, and N. M., Hogstad (Eds.) Proceedings of INDRUM 2018 second conference of the International Network For Didactic Research In University Mathematics (pp. 95-104). Univer Kristiansand, Norway: University of Agder and INDRUM.

Gokcek, T., and Acikyildiz, G., (2016). Pre-service mathematics teachers' errors related to derivative. *Turkish Journal of Computer and Mathematics Education*, 7 (1): 112.

Henning, H., and Keune, M., (2007). Levels of modelling competencies. In: W. Blum, P. L. Galbraith, H. Henn and M. Niss (Eds.) Modelling and applications in mathematics education (Pp. 225-232). US: Springer.

Herbert, S., and Pierce, R., (2008). An emergent model for rate of change. *International Journal of Computers for Mathematical Learning*, 13: 231–249.

Herbert, S., and Pierce, R., (2011). What is rate? Does context or representation matter? *Mathematics Education Research Journal*, 23: 455-477.

Herbert, S., and Pierce, R., (2012). Revealing educationally critical aspects of rate. *Educational Studies in Mathematics*, 81: 85-101.

Johnson, H. L., (2012). Reasoning about variation in the intensity of change in co-varying quantities involved in rate of change. *Journal of Mathematical Behavior*, 31 (3): 313-330.

Jones, S. R., (2017). An exploratory study on student under standings of derivatives in real-world, non-kinematics contexts. *Journal of Mathematical Behavior,* 45: 95-110.

Jones, S. R., and Watson, K. L., (2018). Recommendations for a target understanding of the derivative concept for first-semester calculus teaching and learning. *International Journal of Research in Undergraduate Mathematics Education*, 4 (2): 199-227.

Kertil, M., Erbaş, A. K., and Cetinkaya, B., (2017). Pre-service elementary mathematics teachers' ways of thinking about rate of change in the context of a modeling activity. *Turkish Journal of Computer and Mathematics Education,* 8 (1): 188-217.

Kertil, M., Erbas, A. K., and Cetinkaya, B., (2019). Developing prospective teachers' co-variational reasoning through a model development sequence. *Mathematical Thinking and Learning, 21*(3), 207-233.

Kertil, M., and Kupcu, A. R., (2021). Prospective mathematics teachers' ways of reasoning on differentiability and corner points in a real-life context. *International Journal of Mathematical Education in Science and Technology*, 52 (9): 1361-1384.

MaaB, K., (2006). What are modelling competencies; *ZDM International Journal on Mathematics Education,* 38 (2): 113-142.

Mkhatshwa, T. P., (2018). Business calculus students' interpretations of marginal change in economic contexts. In: Hodges, T.E., Roy, G. J., and Tyminski, A. M., (Eds.), Proceedings of the 40th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (Pp. 564-571). Greenville, SC: University of South Carolina and Clemson University.

Mkhatshwa, T. P., (2020). Calculus students' quantitative reasoning in the context of solving related rates of change problems. *Mathematical Thinking and Learning*, 22 (2): 139-161.

Mkhatshwa, T., and Doerr, H. M., (2016). Opportunity to learn solving context based tasks provided by business calculus textbooks: An exploratory study. In: T. Fukawa Connelly, N. E. Infante, M. Wawro, and S. Brown (Eds.), Proceedings of the 19th Annual Conference on Research in Undergraduate Mathematics Education (pp. 1124-1132). Pittsburgh, PA: SIGMAA.

Mkhatshwa, T., and Doerr, H., (2018). Undergraduate students' quantitative reasoning in economic contexts. *Mathematical Thinking and Learning,* 20 (2): 142-161.

Niss, M., and Jensen, T. H., (2011). competencies and mathematical learning ideas and inspiration for the development of mathematics teaching and learning in Denmark. Denmark: Roskilde University.

Qaisur, R., (2021). Study of curricular implications of interdisciplinary education through pedagogical strategies for planning and learning. *Journal of Education and Development*, 11 (22): 151-164.

Qaisur, R., (2021). Study of concept attainment model as teaching and learning strategy among students. *Journal of Education and Development*, 11 (22): 169-181.

Rodriguez-Nieto, C. A., Rodriguez-Vásquez, F. M., and Garcia-Garcia, J. (2021). Pre-service mathematics teachers' mathematical connections in the context of problem solving about the derivative. *Turkish Journal of Computer and Mathematics Education,* 12 (1): 202-220.

Rowland, D. R., and Jovanoski, Z., (2004). Student interpretation of the terms in first order ordinary differential equations in modeling contexts. *International Journal of Mathematical Education in Science and Technology*, 35 (4): 505-516.

Strauss, A., and Corbin, J., (1998). Basics of qualitative research: techniques and procedures for developing grounded theory (2nd Ed.). Thousand Oaks, CA: Sage.

Teuscher, D. and Reys, R. E., (2012). Rate of change: AP calculus students' understandings and misconceptions after completing different curricular paths. *School Science and Mathematics*, 112 (6): 359-376.

Thompson, P.W., (1994-a). Images of rate and operational understanding of the fundamental theorem of calculus. *Educational Studies in Mathematics*, 26: 229- 274.

Thompson, P.W., (1994-b). The development of the concept of speed and its relationship to concepts of rate In: G., Harel and J., Confrey (Eds.), The development of multiplicative reasoning in the learning of mathematics (Pp. 181-236). New York: State University of New York Press.

Thompson, P. W., (2011). Quantitative reasoning and mathematical modeling. In: L. L., Hatfield, S. A., Chamberlin, and S., Belbase (Eds.), New perspectives and directions for collaborative research in mathematics education: Papers from a planning conference for WISDOMe WISDOMe monograph (volume 1, Pp. 33-57). Laramie: University of Wyoming.

Thompson, P. W., & Carlson, M. P., (2017). Variation co-variation and functions: Foundational ways of thinking mathematically. In: J. Cai (Ed.), Compendium for Research in Mathematics Education (Pp. 421-456). Reston, VA: National Council of Teachers of Mathematics.

Saldanha L. and Thompson P., (1998). Re-thinking co-variation from a quantitative perspective: Simultaneous continuous variation. In: S. B. Berenson and W. N., Coulomb (Eds.), Proceedings of the Annual Meeting of the Psychology of Mathematics Education North America (Vol. 1, pp. 298-304). Raleigh, NC: North Carolina University

Wilhelm, J. A., and Confrey, J., (2003). Projecting rate of change in the context of motion into the context of money. *International Journal of Mathematical Education in Science and Technology*, 34 (6): 887-904.

Yin, R. K., (2011). Qualitative Research from Start to Finish. New York: The Guildford Press.

Yoon, H., Byerley, C. and Thompson, P. W., (2015). Teachers meanings for average rate of change in U.S.A. and Korea. In: T. Fukawa-Connelly, N. E., Infante K., Keene, and M., Zandieh (Eds.), Proceedings of the 15th Annual Conference on Research in Undergraduate Mathematics Education (Pp. 1124-1132). Pittsburgh, PA: SIGMAA.

Zandieh, M. (2000). A theoretical frame work for analyzing students' understanding of the concept of derivative. In: E. Dubinsky, A. H., Schoenfeld, and J., Kaput (Eds.), Research in collegiate mathematics education (Vol. 4, Pp. 103-127). Providence, RI: American Mathematical Society.

Zandieh, M. J., and Knapp, J., (2006). Exploring the role of metonymy in mathematical understanding and reasoning: The concept of derivative as an example. *Journal of Mathematical Behavior*, 25 (1): 1-17.

WOMEN EMPOWERMENT IN THE ERA OF GLOBALIZATION

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ABSTRACT

In the era of globalization India has emerged as a developing country in the world. Before 73th amendment of Indian constitution, the India women were not read to participate in any socio-political decision making mechanism. After 73th amendment of Indian constitution a large section of women has come forward to participate in political, economical, educational and social activities. But the scenario of tribal women has not been changed. The present study was intended to understand the problems in the progress of tribal women.

Women Education in India:

From the history, we can observe that the women in India have been subject to many great changes over the past few decades. In the early Vedic period women enjoyed full freedom and got equal status with men. Women were actively involved in religious and social maters. They had freedom to choose their partners in marriage and widows were permitted to remarry. As India started taking steps towards modern civilization social discrimination increased. In Buddhism women's spiritual capacity was given equal importance. The high status the women enjoyed during the early Vedic period deterioted in the later Vedic period. The periods saw exclusion of women from economic and religious sphere. Widow marriage was looked down upon. Many parents use to kill their female infants and child marriage was encouraged. The condition of women became worse with the entrance of Muslims. "Purdah" system was started. Rajput women practiced Jauhar. Polygamy was commonly found in Hindu kshatriyas. Devdasi tradition was common in South India where girls were married to deities. In the British period there was revival of interest in the women education. During this period Sati was abolished by Raja Ram Mohan Roy. Isawar Chandra Vidyasagar emphasized on women education, he introduced widow remarriage. Mahatma Jyotiba Phule and his wife Savitri Phule were the leaders of lower cast in India who took various initiatives to make

education available to the women of India. In the Charter Act of 1813, there was no provision for women education. But in the Adam's report of 1838 efforts were being made to uplift the female education which was previously being neglected by company's govt.

In the education policy of Charles Wood, which was popular as Wood dispatch 1854, stress was given on female education. Commission known as the hunter commission made some recommendation for the improvement of the women's education in our country. The Hunter commission recommended the entry of women to all the professional courses like teaching and nursing. The commission also suggested going grant-in-aid to all girls school in the country. Efforts were being taken for the improvement of the status of women's education. A women's committee was also formed to take care of the needs of all the women. The Hunter commission also recommended spending more state funds on girls education. In 1904, Lord Carzon decided in his education polity, where it was recommended to make women's education free from exams and also women's education should be practical education based. In 1917 Sadler commission was appointed which also gave suggestion to improve the girls education the last educational initiative taken for female education in India before independence.

Women Education since Independence

After independence, in 1948, the University Education was the first governmental act to organize the education system in the light of democratic prineques. The commission was headed by Radhakrishnan. The commission recommended equal educational opportunities for man and women. From the report of secondary Education headed by L.S Mudaliar, it was clear that a group of women have joined various streams like science, commence and teaching. An institution was made for the study of separate schools for girls by the initiative of state government. Then, the committee of Smt. Durgabai Desmukh was formed in 1957. This committee recommended that girls should be encouraged to take subjects like commence, Agriculture and medicine. Girls should be offered scholarship in University level. A committee was formed under the chairmanship of Smt. Hansa Mehta the committee recommended journey a general curriculum for all girls and boys, so that no differentiation should be made on the basis of gender. It also recommended for including sex education in its curriculum. It all primary schools, women teachers should be appointed. There would be no differentiation in the curriculum of Home Science for both sexes at the middle stage and inclusion of crafts at the secondary level. In 1963 National council for

women's education was appointed to look after the causes of lack of public support especially in rural areas for girl's education and also to enlist public co-operation. The committee was formed under the chairmanship of M. Bhatavatsala. Kothari commission recommended giving scholarship and stipend to women in colleges and University for continuing their higher studies. Girls should be encouraged to enter the provisional fields like social work and teaching based on the recommendation of the Education commission the Indian government declared a National policy of Education in 1968. The NEP 1968 gave continuous effort for the equalization of education opportunities in the country. In the month of May, 1966 a new education policy was formed. The policy was approved by the parliament for suggesting various aspects of education. The new education policy gave emphasis for the removal of disparities in education and recommended to equalize the educational opportunities for all, irrespective of caste and sex.

Importance of women education

Women play a vital role in the overall development of a country. Women education not only helps in the development of half the human resources but also in improving the quality of life at home and outside. Educated women can provide better guidance to all their children. Moreover they can also help in reduction of infant mortality rate and growth of the population.

Education of Tribal Women

A large section of the tribal parent remains illiterate in West Bengal. They are unaware about the importance of modern education in our life. Maximum tribal women of their family were illiterate. So the girls remain first generation learner.

Empowerment of tribal women

The United Nations Industrial Development Organization (UNIDO) gave importance to the women's economic empowerment for gender equality. Women's economic empowerment is at the core of UNIDO's mandate. UNIDO collaborate with the partners across the UN system to advance gender equality and women's economic empowerment in the world. UNIDO also tries encourage investment inclusive and sustainable industrial development owned business and strengthening female networks for inclusive and sustainable industrial development UNIDO''Policy on Gender Equality and the Empowerment of Women, issued in 2009 and updated in the year 2015. The 'Gender Equality and Empowerment of Women strategy 2016-2019' gives a clear plan of action for further development.

In era after the independence women were rising to the highest level of self development, self-expression and self-esteem. Now equalization of educational opportunity is an important step towards gender equality and women empowerment of our country. To become a powerful in the society, women have to be provided with vital educational inputs. Women have to participate in the developmental and decision making process in the society. Development will bring Women empowerment and it will have a direct impact on country's development women empowerment also helps to improve various aspects of children's welfare like health, nutrition education, etc. Hence women empowerment is not only limited to the empowerment of women its effects also spread to the next generation and also the society.

Non-governmental organizations are playing vital role in the women empowerment. They use multiple strategies to improve the condition of women in our country. Since independence the role of NGOS in various welfare programme, women empowerment, protecting the environment, spreading literacy in country are remarkable. NGOs play vital role in women empowerment. Many self help groups (SHGs) also play may or role in empowering women of our country. As such women empowerment has been the central agenda for both the government and NGOs.

Women are the main agent of any socialization in the world the concept of women empowerment is very essential for the development of the nation. A nation cannot make progress without giving importance to the women in all walks of life. NGO and SHGs help a lot for the women empowerment in our country. Despite of lot of effort of the NGOs in the area of women empowerment many women of our rural India are still not yet empowered and do not have any power or freedom to take any family decisions. In this respect, government's contribution has to be significant. NGOs can only supplement the government's efforts. Government has to be more conscious in providing women education and empower the under developed women especially in the rural sectors.

Empowerment of women in our society is only possible by poverty elimination. If women are organized into group for community participation, then the goals of poverty elimination can be easily achieved. Women have to stand for their own rights. Sustainable development can never be possible without women empowerment in our country. For poverty eradication in rural sector, social mobilization of the poor women is highly necessary.

Women's empowerment is required to reduce poverty and various socio-economical issues of our country. Under the government program, 'Development of Women and Children in the rural areas (DWCRA)', women's empowerment has been taken as a mass and rigid movement in India.

Some of the state government helps financially by providing fund to these self-help groups. The government also assists these groups in micro-enterprise activities. DWCRA program of self-help group also helps the women to earn money. Thus the women get economical and social status, which helps them to empower in the society. After women's empowerment they will show awareness in welfare of their family also promote their children's educational status, they will also become conscious about children's health issue, drinking water and sanitation.

Conclusion:

A country's development depends on the involvement of its women in process of development. For years women folk were suppressed socio-economically. Providing them education is the only way to give them autonomy and prestige in the patriarchal society.

Reference Book

1) Empowerment of Women by Minakshi Malhotra.
2) To Introducing women studies by Poulami Aich Mukherjee.
3) Empowerment of women emerging dimension by S. Chand.

Digitalization of Indian Education System

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ABSTRACT

In this study, the researcher investigated how digitalization has become in the field of education and what are its obstacles. Scope of digital education, its various benefits, Various components of digital education, government initiatives to remove the obstacles, various online learning tools these issues have also been investigated in this study. Library method was used in this study. In this study we have come to know about the various aspects of digital education.

Introduction:

Education is a very important determinant of individual and national development. Development of individual and nation is not possible without education. A revolutionary change has started in the field of education today, and technology has played an important role in this field. In the hands of technology, the field of education is becoming increasingly digitized. This change has taken place in the field of education worldwide in the last twenty to thirty years. Internet, smartphones, artificial intelligence, machine learning and various user-friendly apps are special places for students to learning and knowledge acquisition process. In the traditional teaching method, the teacher give only lectures in front of the students. But digital technology is making the classroom teaching-learning process much more effective and enjoyable (Jha et.al). Digital education refers to digital learning. The impact of digital learning is noticeable at all levels and in all areas of education. At present, the evolution of digital education in India is happening rapidly. Notable among the government initiatives of digital education is NCERT e-Pathshala, DIKSHA by the MHRD and Private educational websites include Tata Class Edge, BYJU's (Channappa et.al). The covid-19 pandemic has taught us to digitize our education system as well. This time we started to use e-book instead of traditional book. The covid-19 pandemic has also brought about changes in the relationship between students and teachers and the teacher performs his teaching activities through the website and using various digital applications (Agarwal).

Multiple benefits of digital education although there are some disadvantages emerged as a challenge in front of digital education. Digital education that lacks social interaction, digital education is not accessible to many, Cheating happens in evaluation etc.(https://www.thetechedvocate.org). Despite the difficulties digital education has opened a new horizon in the current education field.

Review of Related Literature:

Mavrotheris, Mavro and Vaz (2021), study focused on Teachers' Perception, Motivation, Experience in Using Digital Video in Higher Education and Other technologies that support teachers' personal and professional development, as well as those used for instructional purposes. Three research question has been used in this research study. This is a cross-national study. In-depth survey methodology is used in this research study and this survey is conducted on faculty members. Quantitative data collected through surveys are analyzed using descriptive and inferential statistics and answers to research question are provided. Linus (2016), study examine the role of Information and Communication Technology Playing in Promoting E-Learning at NOUN Enugu study Centers in Nigeria. Five research question were used in the research study. Triangulated research method has been used in this study. Sample of 344 people was selected using the Wimmer & Dominick online sample calculator. Collected data is analyzed through descriptive statistics. Jha and Singh (2020), this research study's goals are to provide solutions to some queries that can address some societal problems related to offering all pupils a digitally transformed education. The research questions of this study are: does digital education include everyone regardless of class, gender, caste? How to measure whether all are equally benefiting from digital education? This study sheds light on the various challenges of digital education in our Nations and its solutions. Agarwal(2021), Objectives of this study are know about the essential basic elements of digital education. Learn about the various online learning software available for students. Know about the factors hindering the growth of digital education. This study has been done on secondary data. Source of secondary information are research paper, various website, magazine articles. According to researchers, digitization of education is unquestionably necessary in today's global educational environment and system. Gond and Gupta (2017), objectives of this research study to know various components of digital education, benefits of digital education, scope of digital education in India, various challenges of digital education. Qualitative research method used in this study.. This research study has been done based on secondary data. Investment has been increased in

the education department to build the infrastructure of digital education across the country. The Government of India has taken various initiatives for digital education, such as opening IIT and IIM at new locations. This study mentions the various problems of digital education and the initiatives taken by the Government of India to solve them. Sharma (2020), Objective of this research study understanding the impact of digitization on the education sector. To highlight the novel changes that have come in the field of education due to digital transformation. Nature of the present study is descriptive. Research study have been depends on secondary source of information. Due to digitalization, students can access the Internet quickly and effectively, which motivates them to do better on their academic assignments. It demonstrates a mobility of the Indian Educational System with the globalized environment. Virtual reality enables students using mobile e-learning platforms to interact with course material legally. Fu (2013) Computers, the Internet, and electronic delivery systems including radios, televisions, and projectors are examples of ICT components. And the modern field of education makes extensive use of all these components. The relevant research on the application of information and communication technology (ICT) in education is compiled in this study. The benefits of ICT integration in schools, obstacles to using ICT, various strategies for overcoming these obstacles, factors influencing successful ICT integration, in-service and pre-service teachers' attitudes, perceptions, and confidence in using ICT, as well as the significance of school culture in the use of ICT are all covered in this study. Negi et al (2011) New technology' rapid pace of change have a big impact on how people live, work, and play all around the world. The traditional methods of teaching and learning as well as the manner that education is organised are being challenged by new and emerging technology.

Statement of the problem:

The present study is stated as- "Digitalization Of Indian Education System."

Objective of Study:

1. To know scope of digital education in India.

2. To understand the fundamental elements of digital learning.

3. To be aware of the benefits of digital education.

4. To understand the difficulties of digital education.

5. How to remove the barriers of digital education.

6. To be aware of the various online learning tools that are available to students.

7. To investigate the effects of digitization on the education sector.

8. To investigate new developments in the digital transformation of the education sector.

Methodology of the Study: In conducting this research, the researcher used the library method. The study's primary data source is secondary data. without conducting any empirical research, the research is done through a review of the literature. A significant amount of written content was used, including books, magazine articles, journals, and online databases (Jalil and Gond et.al).

Findings of the Study: The findings of this study have been done by sitting on non-statistical methods and analyzing the research objectives (Giannakos et.al). The findings of this research study are mentioned below:

Scope of digital education in India: Digital education has taken a special place in the development of online courses in higher education. Due to the use of digital technologies in the field of education, the invention of new skills has become necessary. The use of these technologies plays an important role in enhancing the teaching learning process and skills. As a result of the continuous development and innovation of the digital world, people are increasing their knowledge and skills. At present, the revolutionary changes in digital technologies have had a direct impact on the education sector. The scope of digital education can include: The infrastructure for delivery, the technology platforms, and the content. The Indian information and technology sector has ample capacity to deliver digital content and supporting digital platforms to learners. In India, online MOOC courses are accessible for higher education, and E-Pathshala offers a digital learning environment where users can learn about a variety of subjects (Kaur).

Fundamental elements of digital education: Fundamental elements of digital education are smart board, class room pc, projectors, internet connectivity. Smart board is an interactive whiteboard. The students of each class need a PC for the assignment and presentation of any topic. One of the basic essentials for digital classrooms is projectors. Both students and teachers make a board visual presentation of a topic through projectors. Good internet connectivity is basic requirement of digital education. The basic elements of safe digital education are digital identity, cyberbullying, cybersecurity, critical thinking, screen time management, digital empathy. Others fundamental elements of digital education are study skills for online learning, feedback, online evaluation (Channappa et.al 2022 and Jha et.al 2020 and Reushle et.al).

Benefits of digital education: Classroom teaching is made fun and interactive through digital education. In digital education, the learning is much more focused as the learning material is presented interactively, so students to pay more attention. Use of tab, laptop or notepad instead of pens and pencils motivates students to complete academic work faster. The reading of e-books and online study materials is particularly helpful in enhancing students' vocabulary. Besides, it helps the students to increase their language skills. Digital education encourages each student to learn at their own pace. Digital education is user-friendly, through which any content of the curriculum can be mastered very well (Laksmi,2016).

Difficulties of digital education: There is a lack of trained teachers needed to properly implement digital education. Many Students texts search on the website for shortcuts to what they want to know. Just as humans are not free from defects, technology is also not free from defects. As a result, various problems are invisible in digital education, among which connectivity problems waste a lot of time of students and teachers. Many website owners provide false information to improve their ranking in search engines. As a result, the students is directed in the wrong direction. Interpersonal and cooperation skills of students and teachers are hampered in digital education, besides it also hampers communication skills. There is no doubt that new and up-to-date technology is extremely expensive, which cannot be afforded by school (Sharma,2020)

Strategies for remove the barriers of digital education: Professional development programs should be arranged to increase the technology related knowledge and skills of teachers, and Support should be provided when needed (AI-Bataineh et al.2008). Provide effective, timed, and continuous training to enhance technology related skills (Hutchison and Reinking 2011). Encourage favorable perspectives on the value of using ICT into education (Lim,2007). Support collaborations that enable educators to share successful technological strategies and expertise (Ertmer et al 2010).

Awareness of the various online learning tools that are available to students: Various online learning tools have taken a very effective role in increasing the quality of digital education. So we need to be aware of these tools. Some of the important online learning tools of digital education are: Edmodo- it is an educational tool that connects and assimilates students and teachers into social network. Projeqt- create multimedia presentations through the Projeqt tool. During the class, the teacher presents educational topics to the students through this tool. Thinglink- by using this tool, educators may make interactive visuals

that incorporate text, sounds, text, and pictures. TED-Ed-The educational platform TED-Ed enables the creation of educational lessons with the help of educators, learners, animators, and other individuals who are interested in advancing knowledge and good ideas. Both teachers and students can democratise access to knowledge by using this website. eduClipper- Teachers and students can share and browse educational and reference materials using this website. With eduClipper, you can gather information from the internet and then distribute it to the individuals in pre-established groups, giving you the opportunity to manage academic content found online more successfully, enhance research methods, and keep a digital record of what students accomplished throughout the course (https://elearningindustry.com).

Effects of digitization on the education sector: Due to digitalization, students can quickly and effectively access the Internet, which motivates them to do better on their academic assignments. It demonstrates a shift within the Indian educational system toward a more worldwide environment. As traditional libraries become obsolete, digitalization helps establish up e-libraries by providing PC lab in schools and institutions. It helps remove roadblocks that may appear in the path of research exercises. As a result of the advancement of digitization, students can meet their partner without leaving the study hall when attending schools in different parts of the state, country, or planet. In the era of digitalization, students will typically choose correspondence courses at schools and institutions that are offered remotely. Students can receive the course outline and specifics by mail (Sharma).

Investigate new developments in the digital transformation of the education sector: While researching about digital transformation in the field of education, it has been seen that an unprecedented change has taken place in the field of education. Various aspects of digital transformation in education sector are discussed here: Technology has completely revolutionized the way we learn nowadays. Digital displays allow teachers to capture the entire class while they are in the classroom, allowing every student to receive the same basic instruction and input from the teachers. The Indian education sector has geared itself for video-based learning as a component of digital marketing, which has made learning more interesting, amusing, and exploratory. An online course with open access and limitless enrollment is known as a massive open online course (MOOC). After the USA, India is thought to have the largest MOOC market worldwide. After covid-19 pandemic most educational institutions have adopted digital education approach. Many educational institutions take their classes

through Zoom and Google Meet. In order to clear the field of evaluation and grading of students, the educational institution has arranged webcams in the case of online exams (Dua et al,2016, and Sinku 2021).

Conclusion:

We have seen in this study how technology has also digitized the education sector. However, even though the age has digitized the education sector, there are some obstacles. And this obstacle is affecting especially in the field of education. We have no doubt that technology will digitize the education sector if these barriers are removed. And the government has taken various initiatives to remove these obstacles. These initiatives are being implemented and As a result, we can see that digitalization is also giving positive results in the field of education. Various online learning tools are being used in teaching, learning, evaluation. That is, we found that technology is digitizing all areas of education. And by accepting it in the field of education, he is enriching himself.

References:

1. Agarwal, R.K. (2021). "Digital Education in India: Scope and Challenges". International Journal of Advanced Research in Commerce, Management & Social Science (IJARCMSS). 04,02(II). pp 99-104.

2. Al-bataineh, A., Anderson, S., Toledo, C. & Wellinski, S.(2008). " A study of technology integration in the classroom." International Journal of Instructional Media. 35. Pp 381-387.

3. Ballid, C., Kambale, P., Chowhan, V. & Bhatthad, R. (2022). " An Overview of Digital Education in India". ResearchGate. ISBN:978-93-90627-417. pp 1-18.

4. Channappa., Kambale, P., Chowhan, V. & Bhatthad, R. (2022). "An Overview of Digital Education in India". ResearchGate. ISBN978-93-90627-41-7,

5. Dua,S., Wadhawan, S. Gupta, S. (2016). " Issues, Trends & Challenges of Digital Education : An Empowering Innovative Classroom Model for Learning". International Conference on Science, Technology and Management, India International Centre, New Delhi. ISBN: 978-81-932074-8-2.

6. Ertmer, P.A. & Otternbreit-Leftwich, A.T. (2010). " Teacher technology change: How knowledge, confidence, beliefs, and culture intersect". Journal of Research on Technology in Education. 42. Pp 255-284.

7. Fu, J.S. (2013). " ICT in Education : A critical Literature Review and Its Implication". International Journal of Education and Development using Information and Communication Technology (IJEDICT). 9(1). Pp 112-125.

8. Gond, R. & Gupta, R. (2017). " A Study On Digital Education In India: Scope and Challenges of an Indian Society". Anveshana's International Journal of Research in Regional Studies, Law, Social Sciences, Journalism and Management Practices (AIJRRLSJM). 2(3). Pp 12-18.

9. Giannakos, M.N., Mikalef, P. & Pappas I.O. (2020). "Systematic Literature Review of E-Learning Capabilities to Enhance Organizational Learning". Information system Frontiers. 24. Pp 619-635.

10. Hutchison, A. & Reinking, D. (2011). "Teachers' perceptions of integrating information and communication technologies into literacy instruction: a national survey in the United States". Reading Research Quarterly. 46. Pp 312-333.

11. https://www.thetechedvocate.org .

12. Chauhan, A. (2018). "11 Digital Education Tools for Teachers and Students", Retrieved August 10,2022 from https://elearningindustry.com .

13. Jha, A.K. & Singh, A.P. (2020). "Digital Education In India: Challenges and their Solutions". ResearchGate.DOI:10.13140.pp1-8.

14. Jalil,A. "Impact of Information Technology in The Education Sector''. Department of Economics, Poona Coolege of Arts, Science and Commerce. Pp 1-9.

15. Kaur, A. (2019). "Digitalization of Higher Education". International Journal of Applied Research. SP4. Pp 114-116.

16. Linus, C. (2019). "E-Learning and Information and Communication Technology". World Applied Sciences Journal. 37(8). Pp 634-640.

17. Laksmi, N. V. (2016). "Digital Education In India". International Journal of Innovative Research in Information Security". 09(03). Pp 62-66.

18. Lim, C.P.(2007) . "Effective integration of ICT in Singapore schools: Pedagogycal and Policy implications". Educational Technology Research Development. 55. Pp 83-16.

19. Mavrotheris, M.M., Mavro, K., Vaz, K. (2021). "The Role of Learning and Communication Technologies in Online Courses' Design and Delivery: A

Cross- National Study of Faculty Perceptions and Practice". ResearchGate. DOI: 10.3389. pp 1-18.

20. Negi, P.S., Negi, V. & Pandey, A.C. (2011). "Impact of Information Technology on Learning, Teaching and Human Resources Management in Education Sector". International Journal of Computer and Telecommunications. 2(4). Pp 66-72.

21. Reushle, S., Dorman, M., Evans, P., Kirkwood, J., McDonald, J., & Worden, J. "Critical Elements: Design for Online Teaching". Distance Education Centre, The University of Southern Queensland.

22. Sharma, M. (2020). "A Study on Digital Transformation and Its Impact on Educato Sector". PalArch's Journal of Archaeology of Egypt/Egyptology (PJAEE). 17(7). Pp 16105-16108.

23. Sinku, S. (2021). "Digital Transformation in Education Sector: The Way Forward For India". Journal of Emerging Technologies and Innovative Research (JETIR). 8(9). Pp 38-48.

Role of Education in Moral Values Development

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ABSTRACT

Value education forms a part of the curriculum in different educational settings across the globe. India like strong emphasis on imparting value education through well defined curricula and syllabi. This paper, an attempt has been made to analyse the impacts of value education on the academic performance of the teachers' as well as the overall environment of the academic institutions where value education programmes have been explicitly put into practice. Impact of values education on teaching as well as student achievement and behaviour, be tested empirically and observed reliably. The observations of the report indicate the profound potential of value education to transform the learning environment, ethos, coherence and inclusiveness of a school and, in so doing, to stimulate student social development by strengthening relationships between students and students and teachers Even though the above mentioned studies strongly indicate positive impacts of value education, there is a need to carry out more such studies in different educational settings across the globe for ascertaining the positive impact of values education on the academic achievements of the students and overall environment of the academic institutions. Need for providing a climate for the nurture of values personal, social, cultural and national values. Education main role must have life-building, man-making, character-making assimilation of ideas and moral value development.

Keywords: Value education, global context, character education, education policy, academic achievements. Destiny, Human Society, Moral Values.

Introduction

Every education is in a sense, value education. Value less education is a contradiction in terms, given the meanings of 'value' and 'education'. Education, in its aims, curriculum and methods, is inseparably linked with values. Moral Value Education in the Global Scenario Over the past two decades, colleges and institutions have devoted energy and resources to a wide range of educational programmes and initiatives designed to promote character values and behaviours in their students. Hence education as the only means of inculcating right values in the heart and soul of the youth. Moral Value education forms a part of the curriculum in different educational settings across the globe. Countries like lay a strong emphasis on imparting value education through well defined curricula and syllabi. The need of value education in today's context cannot be overemphasised. Moreover, the social system worldwide is undergoing great transformation. In Indian scenario, for example, we are gradually moving from joint family system to nuclear family system. Also, there is a high degree of stress, especially in the younger generation, owing to fast paced modern day lifestyle. Factors like religious fanaticism, stockpiling of nuclear weapons and terrorist activities are posing grave threats to global peace. There is a proliferation of vast amounts of information because of internet and media, and this may cause negative impacts, mainly in the more impressionable young minds, unless and until they have something robust to anchor upon. It is here that inculcation of values among the students can play a very important role by shielding them from all such influences. Swami Vivekananda gave importance to "man making education", "nation building education" and "character formation education". Values are the life blood of a civilized human society. They are the saving grace of an educated man or women.

The National Policy on Education (NPE,1986) brought out by the Ministry of Human Resource Development (MHRD) stressed the urgent need for fostering "universal and eternal values" towards the unity and integration of the people, based on heritage, national goals and universal perception. The existing schism between the formal system of education and the country's rich and varied cultural traditions needs to be bridged. Education can and must bring about the fine synthesis between change oriented technologies and the country's continuity of cultural tradition. The curricula and processes of education will be enriched by cultural content in as many manifestations as possible. In our culturally plural society, education should foster universal and eternal values, oriented towards Impacts of Value Education the unity and integration of our people. Such value

education should help eliminate obscurantism, religious fanaticism, violence, superstition and fatalism. Apart from this combative role, value education has a profound positive content, based on our heritage, national and universal goals and perceptions. It should lay primary emphasis on this aspect. The growing concern over the erosion of essential values and an increasing cynicism in society has brought to focus the need for readjustments in the curriculum in order to make education a forceful tool for cultivation of social and moral values."

India value education helps students understand and be able to apply values such as care and compassion; doing your best; fair go; freedom; honesty and trustworthiness; integrity; respect; responsibility and understanding; tolerance and inclusion. In this paper, an attempt has been made to role of education in moral value development.   Impacts of value education on the academic performance of the students as well as the overall environment of the academic institutions where value education programmes have been explicitly put into practice.

Woods dispatch 1984 had definite objectives for the spread of education among Indians. It was its Endeavour to impart instruction in useful subjects and to enlighten them in intellectual, moral and economic fields. The key dimensions which demonstrated a continuous improvement as a result of the character education were in regard to relationships between staff and students and relationships between students. Continued improvements were also observed in relation to student playground behaviour, discipline within the institution, staff stability, enrolments and the perception of the institution as a caring community. The results demonstrated that the impact of character education was significant in relation to the provision of a positive and supportive environment, positive influence on institutional culture, increased cooperation between staff and students, creation of an atmosphere conducive to teaching and learning, improved attributes of the students and attraction of the students to the institution

Buddhist period Gautam Buddha believed in the following principles; good activities, good behavior, tolerance, non- violence. Buddha aim of education was emancipation, character formation and dignity of labor had also important place in curriculum. The impact of parental and family participation was variable. Although the impact of values education appeared to be enhanced when parents understood and shared the school values and reinforced these at home, in general, the successful implementation of values education did not appear to depend on parental support or participation nor did the introduction of values

education per se, engender greater collaboration with families. The common focus drew teachers together to create a collaborative and cohesive school community which supported teachers to do their job more effectively. This had important ramifications for students' academic progress and wellbeing.

Role of the teacher in development of moral values:

The teacher is role model of school and society. Pestolozzy a great teacher saying give me a child for seven years, after words, let the god or devil take the child they cannot change the child. Here the teacher is potter, architect, and designer. So that the teacher must teach about obedience, truthfulness, justice, grace, compassion, brotherhood, cooperation, social service, honesty, good character. A child learns desirable character responses in accordance with principles of goal seeking and by experiencing satisfaction in connection with those responses which are ethically and socially acceptable and annoyances with those which are undesirable. Thus meaningful goals rewards and punishments are basic in character development as in all learning probably in no other form of learning however it is quite so important that they be adjusted accurately to the stage of development of the child. Therefore, within the limits imposed by the nature and timing of the study, it is evident that the central question that drove the study, namely, Can the impact of values education on teaching and school ethos, as well as student achievement and behaviour, be tested empirically and observed reliably?, The observations of the report indicated the "profound potential of value education to transform the learning environment, ethos, coherence and inclusiveness of a school and, in so doing, to Evaluating the development of Value Education stimulate student social development by strengthening relationships between students and students and teachers. In turn there are cascading effects on student learning and behaviour, the way teachers teach and support their colleagues, teacher self efficacy and sense of self fulfillment, and communicative competency and capacity to negotiate. Thus the results have clearly demonstrated the centrality of values education to creation of a stimulating teaching environment and thereby, enhancement of quality teaching.

Conclusion:

In this paper, an attempt has been made to analyse the role of education in moral value development on the academic performance of the students as well as the overall environment of the academic institutions where value education programmes have been explicitly put into practice. Educational institutions are devoting energy and resources to a wide range of educational programmes and

initiatives explicitly designed to promote character values and behaviours in their students. Value education forms a part of the curriculum in different educational settings across the globe. Values Education practices and quality teaching outcomes. Impact of values education on teaching and school ethos, as well as student achievement and behaviour, be tested empirically and observed reliably. The observation of the study indicate the profound potential of value education to transform the learning environment, ethos, coherence and inclusiveness of a school and, in so doing, to stimulate student social development by strengthening relationships between students and teachers. Even though the above mentioned studies strongly indicate the positive impacts of value education, there is a need to carry out more such studies in different educational aspect across the globe for ascertaining the positive impact of moral values education on the academic achievements of the students and teachers'. The ideal of all education, all training should be man-making. Education is not the amount of information that is put into your brain which remains undigested and runs riot-there all your life.

The teachers should promote moral values in the schools. Adequate awareness is to generate among students through conducting different activities. The school must organize different curricular and co curricular programmes. It is for the teacher to identify and select values and to decide how to integrate them naturally in the process of teaching a subject to facilitate value education. Stories, legends, anecdotes, fables and biographies have to be selected to suit the age group so that context of value and purpose to be served can be used effectively to teach language and impact of values simultaneously. A number of activities well planned and presented through selected context that appeal to the target group can facilitate the inculcation of moral values.Teacher also often delay too long or overlooking good opportunities in giving early training.

References:

1. Dalton, J. C., & Crosby, P. C. (2010). "How we teach character in college: A retrospective on some recent higher education initiatives that promote moral and civic learning" *Journal of College & Character*, 11(2), 1-10.

2. Impacts of Value Education (2009). "Project to Test and Measure the Impact of Values Education on Student Effects and School Ambience."(Accessed on 15.09.2010).

3. Lovat, Terence J. and Clement, Neville D.(2008). "The pedagogical imperative of values education", Journal of Beliefs & Values, 29: 3, 273 – 285.

4. Seshadri, C. (2005). "An approach to value orientation of teachers' education" *Journal of Value Education*, NCERT, January and July 2005 issue, pp 9-17.

5. UGC (2010). "National Policy on Education 1986: As modified in 1992." (Accessed on 05.08.2010).

6. Barbara K. Christensen, "Nurturing Gospel Values at Home," Ensign, Oct. 1984, pp. 32-35.

FACTORS INFLUENCING MATHEMATICAL CREATIVITY AND LEARNING ABILITY AMONG SECONDARY SCHOOL STUDENTS IN HAZARIBAG

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ABSTRACT

Creativity is a psychological process that has gained research popularity however it remains a challenge one has to define. The variety of definitions promulgated to understand creativity hints at the complexity of the mental process. Furthermore as subset of creativity remains domain-specific mathematical creativity has also governed variety of definition. The trans-disciplinary research on creativity is seminal in this world of fast-paced innovation invention solution and synthesis. Considering every human being with at least average cognitive abilities possesses the ability to think creatively and developing students' creative talents and abilities must be high on a list of educational priorities. Much of the literature surrounding mathematical creative thinking is centered on trying to quantify an individual's creative thinking abilities. There have also been studies conducted that enabled researchers to describe various traits and demonstrate multiple levels of creativity. The basis of this work will be to synthesize the characteristics of mathematical creativity and analyze the impact of specific teaching approaches on mathematical creativity and examine the relationship between student learning ability and mathematical creativity.

Key words: Factors, Mathematical Creativity, Learning Ability, Students.

INTRODUCTION

When one reflects on academic skills such as literacy mathematics science or social studies one may presume such skills develop based on factors such as teaching approaches and leaning the environments in which the subjects are taught to students' may affect a variety of other factors. The thinking process

may be developed or inhibited in the same manner as an academic skill (Qaisur, 2022). Creative thinking in mathematics is a topic that has over reach as its implications can be connected to a great deal of progress in society. In recent year's interest and activity in general creativity research has become increasingly popular (Akgul and Kahveci, 2016). However when one analyses mathematical creativity the literature remain relatively sparse (Leikin *et al.,* 2010; Sriraman, *et al.,* 2013) respectively. Creativity has long been challenging to define because it is a fuzzy psychological process. According to (Vanderbos, 2006) creative thinking is a mental process leading to new invention solution or synthesis in any area. The renowned 20th century mathematician Henri Poincare (1948) defined mathematical creativity as thinking simply as discernment or choice. However it defines mathematical creativity as the process that results in a novel solution or idea to a mathematical problem or the formulation of new questions (Sriraman, 2005; 2013,). Furthermore (Siswono, 2011) using the research of (Krutetskii, 1976; Torrance 1974) describes creative thinking as the mental process which someone uses to generate new ideas with fluency and flexibility. The variety of definitions that have been adopted to understand creativity hints at the complexity of the mental process. To operationalize the term mathematical creativity for this work it is useful to understand the psychological approach as an amalgamation of mathematical fluency flexibility originality and elaboration. The trans-disciplinary research on creativity (Sriraman and Haavold, 2017) is seminal in this world of fast-paced innovation invention solution and synthesis. Considering every human being with at least average of cognitive abilities possesses the ability to think creatively (Baran *et al.,* 2011). The developing students' creative talents and abilities must be high on a list of educational priorities. Much of the literature surrounding mathematical creative thinking is centered on trying to quantify an individual's creative thinking abilities. There have also been studies conducted that enabled researchers to describe various traits and demonstrate multiple levels of creativity. The basis of this work will be to synthesize the characteristics of mathematical creativity and analyzing the impact of specific teaching approaches on mathematical creativity and examine the relationship between student ability in learning mathematics Qaisur, 2022).

RELATIONSHIP OF MATHEMATICS CREATIVITY

For the purpose of this review of extant literature it is useful to evaluate several pieces of meaningful research in the world of creativity in a general-domain sense. This will illustrate how investigation into creativity has allowed for mathematical researchers to make connections from domain-general creativity to

domain-specific mathematical creativity (Hong and Milgram, 2010). To understand where mathematical creativity is today one must be familiar with foundational work by an English professor and a French Mathematician Graham Wallas (1858-1932) and (Henri Poincare 1854-1912). During an insightful presentation to the French Psychological Society Poincare laid the frame work for mathematical creativity and not so much described the characteristics of mathematical creativity as defined them (Liljedahl *et al.,* 2016). Later, (Wallas, 1926) developed a four-stage model to describe the process of having creative thoughts that was heavily derived from the work of Poincare. This model is known as the Gestalt Model of Creativity. The analysis of Wallas' book, *Art of Thought*, he phrases that the four-stages of creative thinking consist of Preparation Incubation Illumination and Verification. The Gestalt Model is accepted and regularly used by many creativity researchers (Sriraman, 2004). When considering the Gestalt Model of Creativity preparation and verification are considered at conscious stages whereas incubation and illumination are deemed unconscious stages. Poincare describes how the unconscious stages never bear fruit unless followed by or preceded by conscious work. Without the proper conscious preparation of education and investigation of a problem the stage of unconscious and incubation may never take place. Likewise, without follow-up conscious verification, an unconscious illumination will produce nothing. This interplay between the conscious and unconscious mental state is further supported by (Hadamard, 1945) with his descriptions of conscious work unconscious incubation of ideas semi-conscious illumination and finally a conscious verification process. The Gestalt Model of Creativity is well received in the world of mathematics (Sriraman, 2004) conducted qualitative research in which he analyzed mathematicians' thought process and affirmed use of the Gestalt Model. In trying to understand the process of creativity the Gestalt model proposed by (Hadamard, 1945) is still applicable today. This study has attempted to add some detail to the preparation-incubation-illumination-verification model of Gestalt by taking into account the role of imagery the role of intuition the role of social interaction the use of heuristics and the necessity of proof in the creative process. This study identified the moment of conversion from incubation to illumination. Many mathematicians in the study described how this enlightenment occurred at unexpected times. Many reported the break through occurring as they were going to bed or walking or sometimes as a result of speaking to someone else about the problem. The link between creativity and mathematical ability is a relationship that has been investigated and shown to

have a positive relationship (Tabach and Friedlander, 2013; Walia, 2012). The study that explores this connection thoroughly is (Mann's, 2005) in which he examined the relationship between mathematical creativity and mathematical ability amongst a convenience sample of 89 seventh graders. By measuring student scores on the Connecticut Mastery Test 3rd Generation and comparing them to the scores generated from the Creative Ability in Mathematics Test, however Mann demonstrated a statistically significant relationship between mathematics ability and mathematical creativity. Additional research was conducted in which the relationship between six-year olds' level of creativity and their mathematical ability was analyzed. Hence (Baran, *et al.,* 2011) utilized the Torrance Test of Creative Thinking (TTCT) to gather quantifiable evidence of the students' general creative thinking ability and the Test of Early Mathematics Ability 3 (TEMA-3) to measure the students' mathematical ability. The results of this study and the evidence it presents hold unique insight. The study concluded that there was not a significant relationship between the sub-categories of creativity and scores on a traditional math test. Initially, this study appears to suggest an opposing point of view regarding the relationship between creative thinking and mathematical ability. However, when the two tests from this study are examined, it is deduced that the TEMA-3 focuses on measuring the formal mathematical skills of children. The link between creative thinking and mathematical abilities does not lie within formal algorithms and standard procedural knowledge. The relationship lies in the fluid flexible and novel thinking of the individual (Krutetskii, 1976). An assessment that evaluates formal algorithms and definitive procedures does not gather accurate evidence of the overall mathematical ability of a student with high levels of mathematical creative thinking. This brief overview of creativity research has provided depth of understanding in the field and will allow for the remainder of the discussion to focus on domain specific mathematical creativity (Hong and Milgrim, 2010). To begin this discussion the four indicators of creativity in mathematics are fluency flexibility originality (Krutetskii, 1976; Leikin, and Lev, 2007; Siswono, 2011; Sriraman, 2004; Sriraman and Haavold, 2017) and elaboration (Imai, 2010; Kim *et al.,* 2003) must be defined. These indicators when observed suggest that mathematical creativity is taking place. Many of the scales and assessments created to measure mathematical creativity evaluate the inter play between these indicators.

FACTORS INFLUENCING MATHEMATICAL CREATIVITY

One of the indicators of mathematical creativity is originality (Beghetto, 2017; Silver, 1997). Mathematical creativity and originality also referred to as novelty according to (Siswono, 2011) it is an individual's ability to find a solution path that is especially unique and uncommon for that individual's knowledge level. An individual demonstrates originality when one creates a solution that is out of the ordinary rare and novel in a mathematical situation. Initially (Chassell, 1916) originality represented the whole of creativity. The research done by (Krutetskii, 1976) began to expand mathematical creativity to include other indicators. Another indicator of mathematical creativity is fluency (Leikin, 2007; Sriraman and Haavold, 2017). Fluency, in regards to its relationship to mathematical creativity and is notably different than the term procedural fluency often used in the general mathematics classroom. Procedural fluency as understood in the general mathematics classroom describes using procedures accurately efficiently and flexibly (NCTM, 2014). This is in contrast to fluency as defined in the field of mathematical creativity as an individual's ability to come up with many different responses and solution paths to a problem (Krutetskii, 1976). However, creative fluency is quantified by the number of responses that an individual is able to construct. If the individual were able to conceive multiple solutions regardless if they were original then one would be demonstrating strong mathematical fluency.

Additionally flexibility indicates mathematical creativity (Leikin, 2007; Mann, 2006). In relation to mathematics flexibility refers to the ability of an individual to change thinking paths when encountering an impasse or thinking obstruction. The inflexible individual will typically continue to pursue a solution path to avail (Imai, 2010). The individual that demonstrates high levels of flexibility is likely to switch thinking paths efficiently in order to approach the problem from a new direction. A common example of flexibility in thinking may be thinking backwards from the solution to a process or changing content areas in mathematics to gain additional insight to a solution path. The final and most recently incorporated indicator of mathematical creativity is elaboration (Imai, 2010). Elaboration describes an individual's ability to give in-depth reasoning behind a solution path. In contrast to some creative individuals who intuitively arrive at original solutions to demonstrates high elaboration indicators will be able to justify mathematical reasoning and provide sound explanations for why it is an appropriate solution (Kim *et al.,* 2003). This work will continue to refer to these indicators of mathematical creativity. They will serve as insight or

indicators of when mathematical creativity is occurring within an individual and thus mathematical creativity as a whole can be interpreted as some amalgamation of the afore mentioned four indicators.

LEVELS AND CLASSIFICATIONS OF MATHEMATICAL CREATIVITY

Researchers have categorized and classified mathematical creativity in various manners. (Siswono, 2011) describes five Levels of Creative Thinking (LCT). She bases her levels on a combination of mathematical fluency flexibility and originality (Krutetskii, 1976). Students that attain the highest LCT scores in mathematics demonstrate all three of these mathematical characteristics and use them to solve to represent and pose problems though perhaps they will not utilize each component of creativity in every single problem solving situation. Since, (Ervynck, 1991) also attempts to describe levels or stages of mathematical creative thinking. The three stages are preliminary technical algorithmic activity and creative conceptual constructive activity. In addition to these three stages, adds that the context for creativity is set by a preparatory stage in which mathematical procedures become interiorized through action before they can be the objects of mathematical though therefore, the constructs a fourth stage, the context stage. Beginning with the Preliminary Stage of Ervynck's model, an individual uses mathematics in a repeated and practical manner. The problem solver may not realize the depth of mathematical content behind the process at the time but instead use a toolkit to successful solutions. Someone who demonstrates high elaboration indicators will be able to justify mathematical reasoning and provide sound explanations for why it is an appropriate solution. This work will continue to refer to these indicators of mathematical creativity as they will serve as insight or indicators when mathematical creativity is occurring within an individual.

LEARNING ABILITY OF MATHEMATICAL CREATIVITY

The individual is only verified of success in whether or not the procedure continues to work and coin the second stage Algorithmic Activity. This stage is defined by an individual being able to generate and calculate algorithms and describes how all intermediate steps have to be considered at least implicitly if not serious error may occur and totally invalidate the result. The ability to solve context algorithm is still considered part of the preliminary stage as it does not demonstrate the ability to produce meaningful intermediate steps necessary to generate the algorithm. A conceptual understanding of all foundational skills is necessary for an individual to truly demonstrate algorithmic activity (Ayllon *et*

al., 2016). This evidence suggests that before students move into algorithmic-based problems they must first have internalized necessary conceptual under standings in order to fully understand the more abstract algorithms.

The final stage presented by (Ervynck, 1991) is the Creative conceptual constructive activity. It considers this stage the essence of true mathematical creativity. Characteristics of this stage include divergent thinking non-algorithmic activity hypotheses and deductions from the hypotheses to establish the proof of the theorem. Two distinct steps are outlined in the process of hypotheses and proofs. The first step is the creation of a valued hypothesis. The second is drawing conclusions based on the hypothesis which leads to development of the concept or theorem. In lieu of this proposed idea of mathematical creativity others such as Chamberlin and Mann and (Nadjafikah *et. al.,* 2011), and (Silver, 1997; Torrance, 1974) argue that an individual need not be an advanced mathematician to demonstrate creative thinking in mathematics. Rather the argument is made that an eight-year-old individual who solves an addition problem in an original manner that was never taught to him may be demonstrating mathematical creativity to the same degree as a well-versed mathematician who is proving a new theorem. In both situations problem solvers are creating a solution to a novel problem. However (Silver, 1997) contrasts this classical genius view of mathematical creativity with a more contemporary one. He describes the classical view as the enlightenment of a gifted individual to have an exceptional thought whereas the contemporary view relates to deep flexible knowledge in content that is an inclination to think and behave creatively. The contemporary view of creativity suggests that teacher instruction is crucial in developing mathematical creativity in students and that creativity is not only for a few gifted students but appropriately in reach for the general school population Boaler, and Dweck, 2016; Silver, 1997).

ASSESSING MATHEMATICAL CREATIVITY

The need for valid mathematical creativity assessments is high. As mathematical creativity has been categorized and classified however scales and tests to quantify mathematical creativity appear to be scant (Akgul and Kahveci, 2016). The interest in mathematical creativity is proliferating valid and reliable assessments to accurately capture insight on domain-specific mathematical creativity are lacking. In light of their paucity there have been a few tests implemented in the past years that have taken aim at quantifying mathematical creativity each has its strengths and weaknesses. Hence (Akgul and Kahveci, 2016) have recently developed a scale for quantifying mathematical creativity.

The Mathematical Creativity Scale (MCS) was designed to measure responses to items that were linked to fluency flexibility and originality. Compiled data was then correlated to over-all mathematical creativity scores. Students were given a five-item test that implemented in open-ended questions to promote divergent thinking. Fluency flexibility and originality were graded for each item using different scoring methods. Fluency was scored by awarding one point for each strategy used to solve the problem. Flexibility was scored by categorizing the different responses into groups and awarding points for different groups that answers were produced for originality was scored using a scale where more points were awarded for the rare responses and the point value decreased with more common responses. From the validation process of this test there were a few note-worthy conclusions. One conclusion drawn from is that originality and flexibility had a correlation value of almost with creativity which means that they can be used to assess creativity alone. Furthermore they added fluency has a minimum correlation with total creativity score fluency should not be used alone. This could imply that selection of fluency alone may not be sufficient when assessing mathematical creativity. Also considering the stance that originality and flexibility have an extremely high correlation to overall mathematical creativity future studies may decide to focus more closely on either originality or flexibility not necessarily both. There were five items selected and implemented on the MCS. These five items are open-ended questions that lend themselves to multiple solutions but fail to form a connection to the individual's life and the real-world. However (Lesh *et al.,* 2000) outline six principles of design for Model-Eliciting Activities (MES's) which prove beneficial for observing students' mathematical thinking. One of these six principles is the reality principle which states that in order to produce the impressive kinds of results and it is important for students to try to make sense of the situation based on extensions of their own personal knowledge and experiences. When interpreting the findings of it is important to weigh the individual test items used in the scale and consider that without personal connection to the items the students may not be able to demonstrate their true mathematical creativity.

The Creativity Abilities in Mathematics Test (CAMT) is regarded as a seminal instrument for assessing mathematical creativity. Balka's (1974) method into the development of this test incorporated the input of many content experts. The CAMT was developed with a sample of 600 middle grade students, and after a validation process was deemed to have a Cronbach's alpha reliability of 0.72 (Balka, 1974). This measure of internal consistency lies in the acceptable range

for an assessment of this type. The CAMT also boasts a standard error of measurement of 7.24 by (Mann, 2006) used the CAMT as an independent measure in which to compare other factors such as gender mathematical ability student perception of creativity and a student's attitude toward mathematics. This allowed him to generate conclusions about the relationship between these factors and the students' mathematical creativity. Of the many factors that were analyzed and compared in Mann's study the strongest indicator of high achievement on the CAMT is mathematical ability. Results of this study also conclude that students' attitude toward math have a significant correlation to the CAMT score whereas gender and self-perception of creativity do not have significant correlations to the CAMT score. As a general understanding of mathematical creativity has been developed the discussion will now focus on the possibility of influencing mathematical creativity. If the mental process of creativity were an immutable one future progress on its development in individuals may be stagnant. However if the mental process is shown to have the capability of growth then a focus on supporting its development would be critical.

TEACHER APPROACHES THAT PROMOTE MATHEMATICAL CREATIVITY

Mathematical creative thinking is a mental process that can be improved upon and developed (Hong and Milgram, 2010) described how the educational environment in which students are situated can affect the realization that they are capable of and able to think creatively. The general acceptance is that teachers are a critical component that helps foster students' creative thinking in mathematics (Nadjafikhah *et al.,* 2012). This synchronizes with the notion that teacher practice will impact the level of mathematical creativity in students (Silver, 1997) respectively.

However (Hong and Milgram, 2010) investigated the relationship between domain-specific and domain-general creative thinking to evaluate whether educational experiences could influence creativity. They did this by investigating the long-standing assumption that domain-general creativity would have a high correlation to the individual's domain-specific creativity. On the contrary the researchers investigated if an individual's creative thinking is primarily domain-specific meaning that the person may be able to embody creativity in specific skills   but not necessarily in all domains. The finding from the study was a difference between the creative thinking of high schools and college students. This difference in creative thinking was attributed to two things first years of

education and second exposure to highly complex problem situations. Due to college students' exposure to more years of schooling than high school students they demonstrated increased creative thinking in specific areas. Additionally the college students had encountered more complex problems requiring divergent and diverse problem-solving skills than high schools (Qaisur, 2021). From the data the conclusion is drawn that the inconsistent finding on age differences across studies supports the specific nature of creative thinking and life experience that are required for problem solving in various domains. This research supports the notion that creative thinking may be a domain-specific process that can be nurtured and developed with appropriate teaching approaches. With the supposition that mathematical creativity is a domain-specific process that can be developed there are certain teaching approaches that require divergent thinking processes which will aid development of mathematical creativity.

PROBLEM-SOLVING IN MATHEMATICS

There are specific teaching approaches that support authentic and creative thinking in mathematics. The teaching approaches that will be discussed can all be viewed as Problem Solving and Problem Posing Tasks (PSPPT).
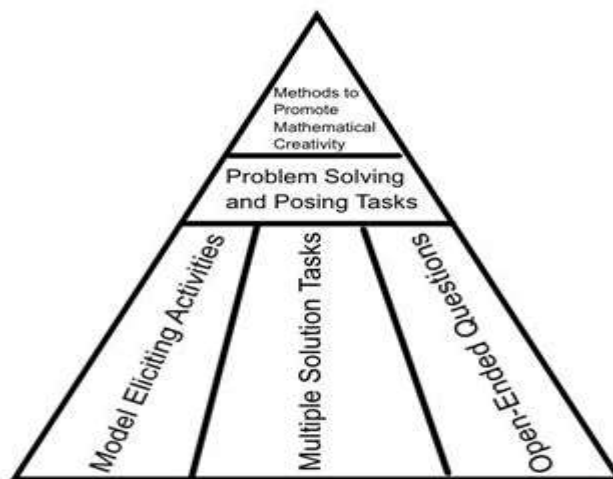
Fig. 1: Teacher approaches that supports mathematical creativity.

PSPPTs share characteristics in that they require to some sense a formulation of strategy an attempt to implement the strategy a reformulation of strategy and eventually a solution to the problem. This sequence of thought modification during the problem solving process plays an important role in developing an overall highly creative disposition towards mathematics (Silver, 1997). The

characteristics of PSPPTs directly support fluency flexibility and originality which are three traits of creativity in mathematics. Through the process of solving problems students demonstrate the ability to solve problems by finding multiple solution paths thereby facilitating fluency changing of course when they encounter a stumbling block thereby facilitating flexibility and coming up with efficient and original ways to solve problems by facilitating novelty (DeBellis and Goldin, 2006). Through the process of posing their own problems students practice writing a variety of problems promoting fluency create problems that lead to divergent thinking and mental impasses' which promotes flexibility and analyze a problem and create a problem that is different which precipitates novelty. PSPPTs are crucial in the cultivation of creativity in mathematics (Kandemir and Gur 2007; Silver, 1997; Luchins, 1942).

One specific teaching approach that is determined to have a positive relationship to mathematical creativity is open-ended questioning. After undergoing twelve week training on methods to promote creative thinking and problem solving 45 secondary mathematics teachers were involved in a qualitative study by (Kandemir and Gur, 2007). Each educator was interviewed the discussion was transcribed and their responses were classified into themes. A prominent theme was use in open-ended questions that related to daily life supported and the development of creative thinking. Another theme stated that teachers who judge skills rather than generalize and can inhibit creative thinking in students. If a teacher has this characteristic students will have a challenging time overcoming mental barriers in mathematics. To support creative thinking teachers must be willing to look at all responses and appoint at least some sense of value to each and refrain from declaring whether a specific answer is right or wrong. Teacher practice such as this inherently reaffirms one student's answer and consequently may imply that the other students do not have worth-while mathematical input. Open-ended questioning is a teaching approach that allows students to apply flexibility fluency and originality to their thinking. A pivotal element of the open-ended questioning is allowing students to hear their peer's mathematical justifications and reasoning (Hiebert *et al.,* 2000). Furthermore it gives the opportunity for students to hear multiple solution paths that were attached in a creative or unique fashion. In this environment creativity is not self-enclosed managed but public and fostered. Students in this class room may internalize the creative methods suggested by peers and implement similar strategies in the future.

STUDENT LEARNING AND MATHEMATICAL CREATIVITY

One of the primary motivators for the recent interest in mathematical creativity is its relationship to affect (Akgul and Kahveci, 2016). The tie between student affect and mathematics may play a critical role in the student's ability to produce creative thoughts. Mathematical affect decreases with each consecutive school year and most dramatically between the 3rd and 8th grade year (Tuohilampi, 2016). This trend is seen world-wide taking into account factors in common between cultures and genders. Considering this it is essential to evaluate the role of affect and its relationship to mathematical creative thinking. It created an intervention built around problem solving open ended questions collaboration and student-centered mathematics. These interventions made a significant positive difference in the level of the students. A factor of interest in the study was activating responses. Activating responses were ones in which a positive emotion towards mathematics was demonstrated whereas a de-activating response was marked by a negative or flat emotion towards the mathematical exercise. The data analysis surfaced 54.3% of students who underwent the intervention had activating responses whereas 16.9 % of students who were in the control group had activating responses. On the contrary 27.8 % of students who under-went the intervention had de-activating responses and 70.1 % of the control group had de-activating responses. This data pattern illustrates how students who were given the chance to problem solve collaborate and struggle with open-ended questions maintain higher affect in mathematics than those exposed to more traditional styles of mathematical teaching. (McLeod, 1992) structured the area of mathematical affect into three concepts of emotions attitudes and beliefs. Later on (Debellis and Goldin, 1997) added a fourth concept of mathematical affect which they describe as values. When these four structures of mathematical affect are examined the combined positive or negative existence of them makes up an individual's complete mathematical affect. When (DeBellis and Goldin, 2006) further explain these four concepts of affect ranging from most rapidly changing to most stable. Emotions are very rapidly changing and vary depending on the specific situation that is presented. Attitudes are developed pre-dispositions based on previous experience. Beliefs are developed and influenced by external truths or factors that weigh on perception. Finally values have deep rooted moral and ethical elements and are incredibly stable.

DISCUSSION

The research in mathematical creativity has implications to cognition and ultimately education. Not only does the research imply that changes may be needed in our education system it also implies that changes may be needed in the general view of mathematics a view that nourishes mathematical creativity in the class room. The presented literature suggests that students' mathematics learning be fostered through support of their creativity due to their positive relationship (Mann, 2006; Tabach and Friedlander, 2013; Walia, 2012). The body of research acknowledges that teacher approaches paired with an environment in which certain affective traits are nurtured may support the emergence in mathematical creativity. The corpus of research supports the need for mathematical creativity to be nurtured and cultivated in students. As (Sriraman, 2004) stated It is in the best interest of the field of mathematics education that we identify and nurture creative talent in the mathematics classroom. Recent research implies that promoting creativity in mathematics will benefit student learning and knowledge (Mann, 2006). Since (Nadjafikhah *et al.,* 2012) support this claim in stating it is necessary to improve teachers' ability to plan and implement educational environments that provide a secure atmosphere that students are encouraged to take risks make mistakes and interact with others and share their point of view. It is feared that without the nurture of mathematical creativity students may suppress their creative thoughts and develop a distaste for mathematics overall. Similarly the environment in which a student learns mathematics can support direct and guide creativity. Teachers play a vital role in student development by supporting creativity through teaching methods and by nurturing students mathematical affect in the class room. Mathematical creativity is important to student's teachers and crucial for the future progress and development of the field of mathematics.

TEACHING APPROACHES FOSTER MATHEMATICAL CREATIVITY

Specific teaching methods should be in place to help develop students' creativity in mathematics. Just like best practice in reading writing or class room management there are specific teaching strategies that best support creative thinking in mathematics. Four specific teaching methods are discussed and endorsed to promote creative thinking (a) problem-solving and problem-posing tasks (PSPPT) (b) mathematical modeling through MEAs (c) multiple solution tasks (MST) and (d) open-ended questions. Tasks that encourage creativity have certain characteristics that include constructions connection to reality self-assessing documentation multiple solutions and justifications. Moreover in the

context of mathematics they support divergent thinking at times and convergent thinking at other times. These characteristics in mathematical teaching transcend some current and traditional problems. However (Lesh *et. al.,* 2000) describe how traditional problems most often seen in the current education system and textbooks tend to assess and endorse the acquisition of low level facts. The methods in which educators administer and to evaluate students' mathematics only have the potential for measuring specific skills rather than deeper level understanding. On the contrary teaching approaches presented in afore mentioned work may give insight into students' mathematical thinking promote deep level mathematics understanding and support mathematical creativity. Shared characteristics occur between these four teaching approaches making them some-what facile to implement. One common thread amongst these instructional approaches is that they do not encourage one single correct response or solution. Educators play an important role by refraining from providing verified and directed responses. Employing these teaching approaches allow students to create solution paths that may lead to technically accurate or less accurate solutions. The mathematical art evident in the process of developing the strategies is where the learning takes place more so than the summative answer derived from the process. Furthermore this teaching approach allows students' original thinking and develops to solve the problem. By participating in any of these tasks students have failures and struggles embedded in their mathematical thinking. Hence it suggests that individual struggle is when the mind is most active and engaged. These teaching methods provide students opportunity to encounter struggle thus creating an environment where their mind is developing. In addition these teaching approaches relate to a student's experience and their schema of knowledge. Mathematical instruction should be meaningful to students so they develop a relationship between the content and an experience in their lives.

POTENTIAL STATES THAT SUPPORT MATHEMATICAL CREATIVITY

Based on affective characteristics certain individuals are more prone to exhibit creative thoughts in mathematics than others are. This implication lends itself to class room adaptations which support certain affective states which possibly support mathematical creativity and curtail certain negative affective states which possibly hinder mathematical creativity. When looking at the entire picture of mathematical understanding of an individual affect may play a larger role than previously assumed (Gerdes and Stromwall, 2008). It is critical that

educators can use this knowledge to develop a culture of mathematics in the class room that develops certain affective traits within students thereby supporting mathematical creativity. This analysis of mathematics research leaves questions that require further investigation. Since and (Hiebert, *et al.,* 2000) discuss the importance of meaningful mathematics instruction in schools. For instance argues that student engagement in mathematics comes from seeing the creativity and different views of mathematical solutions that precise thinking combined with creativity flexibility and multiplicity of ideas and the mathematics comes alive for people. Continued research in mathematical creativity could allow for this love and life to be brought into mathematics for individuals. Research in creativity in mathematics still has a plethora of avenues in which it needs to be explored.

ASSESSMENT TOOLS FOR AFFECTIVE EMOTIONAL STATES

Empirical research is needed to pursue concrete answers in the discussion revolved around the influence of affective emotional states. Given the fact that many of the tenets of this are based on the synthesis of literature and empirical data must be collected in an experimental or quasi-experimental setting. Whether a relationship exists between mathematical problem solvers' affective states and creative output in problem solving tasks appears to be an answered question. However, precise states may be in question and exact levels of said states may also be in question. For instance it is a psychological construct what levels must be attained for creative output to be revealed.The necessary direction for future research could be focused on empirical studies in which data are gathered and relationships are identified between domain-specific mathematical creativity and specific teacher approaches. Certain teaching approaches have been examined and mathematics psychology researchers claim positive effects on students' mathematics creativity such as open-ended questions, Model-Eliciting Activities and Multiple Solution Tasks (Lesh *et al.,* 2000, Chamberin and Moon 2005, Leikin, 2009). What is yet to be documented however is the quantifiable score of creativity that was assessed as a pretest posttest model when these instructional approaches are implemented in a holistic manner. For example classroom that is solely implementing these strategies in their mathematics instructions needs be compared to a control classroom one that is not implementing any of these creativity-nurturing approaches. This would give insight into the correlation between creative output in a classroom that implements these strategies and one that implements an algorithmic procedural teaching approach (Livne and Milgram, 2006). Data from this research would encourage the mathematics

education community to reconsider the way that mathematics is being taught in some schools. Sheets of problems that stimulate no creative thinking processes would therefore come under reconsideration for value and perhaps be mitigated in use. Said research may illuminate the understanding that students' mathematical creative thinking ability an essential for future growth will be nurtured most effectively by implementing thought-provoking and problem solving and problem posing tasks.

RE-TOOLING MATHEMATICAL CREATIVITY ASSESSMENTS

The validity and reliability of tests used to quantify domain-specific mathematical creativity has been brought into question. Although there are tests in this area of research that do attempt to assign a score to mathematical creativity they lack the necessary psychometric properties and structure to truly examine mathematical creativity. As outlined previously each test has its own strengths and weaknesses but none appear to directly assess the fundamentals of mathematical creativity based on updated research. It is noted that the most recent attempt at a mathematical creativity assessment is the MCS. Although it gives a score for creative thinking in mathematics this scale does not meet the specific needs of measuring mathematical creativity as the items throughout the test are not linked to real-world problems and do not lend themselves to the MEA principles of design (Chamberlin and Moon, 2005; Lesh *et al.,* 2000). This area begs further investigation. Currently the TTCT and the CAMT are being used in many settings. Although these tests have proven worth-while and contributed to the body of research they are nearly half a century old and lack updated scoring criteria that are based on new components of mathematical creativity such as the elaboration process. However (Huck, 2012) suggests that instruments that have not been normed in the past seven years should undergo another round of validation.

Furthermore there is an incongruity between extant literature in mathematical creativity and the tests used to assess mathematical creativity and the factor of incongruity is the indicator of elaboration. Elaboration is the fourth indicator of mathematical creativity (Leikin, 2009) and currently instruments designed to assess mathematical creativity do not incorporate elaboration in their data collection. Taking this into consideration it is time to develop an up-to-date assessment that meets current needs in mathematical creativity (Sadler-Smith, 2015). There has been a growing amount of interest in the field and many researchers are continuing to contribute to the current corpus of literature. This

recent surge in scholarly work will provide valuable information that must be imbedded as foundation for any future mathematical creativity test.

CONCLUSION

The conclusion drawn from current literature is conceivably powerful to the field. Research explicated contains two factors that influence mathematical creativity among student affect and teacher approaches. The obscurity lies in the power of considering these two factors jointly. Missing research conceals a possible relationship between these two factors when harmoniously supported in the classroom and mathematical creativity. The question arises will a change in student affect or a change in teaching methods be enough to influence mathematical creativity by E. Paul Torrance would argue the essence of creativity cannot be quantified and a mere measurement of current indicators will not guarantee that an individual acts in a creative manner (Hebert, *et. al.,* 2002). However to depict a student's creativity more comprehensively one possible next step is to look at an individual's affect combined with pedagogical experiences in a combined manner to evaluate its relationship to the student's mathematical creativity.

REFERENCES

Akgul, S., and Kahveci, N. G., (2016). A study on the development of a mathematics creativity scale. *Eurasian Journal of Educational Research,* 62: 57-76.

Ayllon, M. F., Gomez, I. A., and Ballesta-Claver, J., (2016). Mathematical thinking and creativity through mathematical problem posing and solving. *Journal of Educational Psychology Propositosy Representaciones,* 4: 195-218.

Balka, D. S., (1974). The development of an instrument to measure creative ability in mathematics. *Dissertation Abstracts International*, 36 (1), 98. (UMI No. AAT 7515965)

Baran, G., Erdogan, S., and Çakmak, A., (2011). A study on the relationship between six year old children's creativity and mathematical ability. *International Education Studies,* 4: 105-111.

Beghetto, R. A., (2017). Lesson un-planning: toward transforming routine tasks into non-routine problems. *ZDM Mathematics Education*. 49: 987-993.

Boaler, J., and Dweck, C. S., (2016). Mathematical mindsets: unleashing students potential through creative math, inspiring messages, and innovative teaching. San Francisco, CA: JB Jossey-Bass, a Wiley brand.

Chamberlin, S. A., and Moon, S. M., (2005). Model-eliciting activities as a tool to develop and identify creatively gifted mathematicians. *Journal of Secondary Gifted Education,* 17: 37-47.

Chassell, L. M., (1916). Tests for originality. *Journal of Educational Psychology,* 7: 317-328.

DeBellis, V. A., and Goldin, G. A., (1997). The affective domain in mathematical problem solving. In: E. Pehkonen (Ed.), Proceedings of the 21st Conference of the International Group for the Psychology of Mathematics Education, Vol. 2 (Pp. 209-216). Finland: University of Helsinki.

DeBellis, V. A., and Goldin, G. A., (2006). Affect and meta-affect in mathematical problem solving: A representational perspective. *Educational Studies in Mathematics,* 63: 131-147.

Ervynck, G., (1991). Mathematical Creativity. In: D. Tall (Ed.), Advanced Mathematical Thinking (Pp. 42-53). Dordrecht, Netherlands: Kluwer.

Gerdes, K. E., and Stromwall, L. K., (2008). Conation: A Missing Link in the Strengths Perspective. *Social Work*, 53: 233-242.

Hadamard, J., (1945). Essay on the psychology of invention in the mathematical field. Princeton, NJ: Princeton University Press.

Hebert, T. P., Cramond, B., Neumeister, K. L., Millar, G., and Silvian, A. F., (2002). E. Paul Torrance: His life, accomplishments, and legacy Research monograph series. Order Department, University of Connecticut. The National Research Center on the Gifted and Talented, 2131 Hillside Road Unit 3007, Storrs, CT 06269-3007

Hiebert, J., Carpenter, T., Fennema, E., Fuson, K., Wearne, D., Murray, H., Olivier, and Human, P. (2000). Making sense teaching and learning mathematics with understanding. Portsmouth, NH: Heinemann Publishers.

Hong, E., and Milgram, R. M., (2010). Creative thinking ability: Domain generality and specificity. *Creativity Research Journal,* 22: 272- 278.

Huck, S., (2012). Reading statistics and research (6th Ed.). Boston, MA: Allyn and Bacon.

Imai, T., (2010). The influence of overcoming fixation in mathematics towards divergent thinking in open ended mathematics problems on Japanese junior high school students. *International Journal of Mathematical Education in Science and Technology*, 31: 187-193.

Kandemir, M. A., and Gur, H., (2007). Creativity Training in Problem Solving: a model of creativity in mathematics teacher education. *New Horizons in Education,* 55 (3): 107-122.

Kim, H., Cho, S., and Ahn, D., (2003). Development of mathematical creative problem solving ability test for identification of gifted in math. *Gifted Education International,* 18: 164-174.

Krutetskii, V. A., (1976). The psychology of mathematical abilities in school children. Chicago: University of Chicago Press.

Leikin, R., and Lev, M., (2007). Multiple solution tasks as a magnifying glass for observation of mathematical creativity. In J.H. Woo, H.C. Lew, K.S. Park, and D.Y. Seo (Eds.) Proceedings of the 31st International Conference for the Psychology of Mathematics Education (Vol. 3) Pp. 161-168). Korea: The Korea Society of Educational Studies in Mathematics.

Leikin, R., (2009). Exploring mathematical creativity using multiple solution tasks. In: R. Leikin, A. Berman, and B. Koichu (Eds.), Creativity in mathematics and the education of gifted students (pp. 129-145). Rotterdam, Netherlands: Sense Publishers.

Leikin, R., Berman, A., and Koichu, B., (2010). Creativity in mathematics and the education of gifted students. Rotterdam: Sense Publishers.

Lesh, R. A., Hoover, M., Hole, B., Kelly, A., and Post, T., (2000). Principles for developing thought-revealing activities for students and teachers. In: A. Kelly and R. Lesh (Eds.), Handbook of research in mathematics and science education (Pp. 113-149). Mahwah, NJ: Lawrence Erlbaum Associates

Liljedahl, P., Santos-Trigo, M., Malaspina, U., and Bruder, R., (2016). Problem Solving in Mathematics Education. Switzerland: SpringerOpen.

Livne, M. L., and Milgram, R. M., (2006). Academic versus creative abilities in mathematics: two components of the same construct. *Creativity Research Journal*, 18: 199-212.

Luchins, A., (1942). Mechanization in problem solving: The effects of Einstellung. *Psychological Monographs,* 54: 1-95.

Mann, E. L., (2006). Creativity: The Essence of Mathematics. *Journal for the Education of the Gifted,* 30: 236-260.

McLeod, D. B., (1992). Research on affect in mathematics education: A reconceptualization. In D.A. Grows (Ed.), Handbook of Research on

Mathematics Teaching and Learning (Pp. 575-596). New York: Macmillan.

Nadjafikhah, M., Yaftian, N., and Bakhshalizadeh, S., (2012). Mathematical creativity: some definitions and characteristics. *Procedia Social and Behavioral Sciences,* 31: 285-291.

Qaisur, R., (2022). Prospective role of mathematics teachers' in understanding of derivative across real life in learning and teaching process. *Journal of Education and Development*, 13 (24): 76-93.

Qaisur, R., (2021). Significance of taxonomy as disciplinary concepts of learning instruction and assessment in students. *Journal of Education and Development*, 11 (22): 100-112.

Sadler-Smith, E., (2015). Wallas' four-stage model of the creative process: More than meets the eye. *Creativity Research Journal,* 27: 342-352.

Silver, E. A., (1997). Fostering creativity through construction rich in mathematical problem solving and problem posing. *ZDM-International Reviews on Mathematical Education*, 29: 75-80.

Siswono, T. Y. E. (2011). Level of student's creative thinking in classroom mathematics. *Educational Research and Reviews,* 6: 548-553.

Sriraman, B. (2004). The characteristics of mathematical creativity. *Mathematics Educator,* 14: 19-34.

Sriraman, B., (2005). Are mathematical giftedness and mathematical creativitysynonyms? A theoretical analysis of constructs. *Journal of Secondary Gifted Education*, 17(1): 20-36.

Sriraman, B., Haavold, P., and Lee, K., (2013). Mathematical creativity and giftedness: a commentary on and review of theory, new operational views, and ways forward. *ZDM,* 45: 215-225.

Sriraman, B., and Haavold, P., (2017). Creativity and giftedness in mathematics education: A pragmatic view. First compendium for research in mathematics education. Reston: National Council of Teachers of Mathematics.

Tabach, M., and Friedlander, A., (2013). School mathematics and creativity at the elementary and middle-grade levels: How are they related. *ZDM,* 45: 227-238.

Torrance, E. P. (1974). The Torrance tests of creative thinking: Technical-norms manual. Bensenville, IL: Scholastic Testing Services.

Tuohilampi, L., (2016). Contextualizing mathematics related affect: Significance of students' individual and social level affect in Finland and Chile. *REDIMAT - Journal of Research in Mathematics Education,* 5: 7-27.

Vanderbos, G. R., (2006). APA Dictionary of Psychology. Washington, DC: American Psychological Association.

Walia, P., (2012). Achievement in relation to mathematical creativity of eighth grade students. *Indian Streams Research Journal,* 2: 155-160.

Wallas, G., (1926). The art of thought. London, UK: Jonathan Cape.

The Role of Constructivist Approach and Existentialist Approach in the development of Creativity: An Analytical Study

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ABSTRACT

The main purpose of education is to develop the inner qualities of every child. It is also expected that her role in the society will be positive and influencing the maximum number of people. Constructivist Approach and Existentialist Approach are the two philosophy of subjectivity which can flourish learner's creativity which can also fulfill the needs of every child and the society. The purpose of this study is to find out the differences between the Constructivist Approach and Existentialist Approach. This study includes the discussion on cooperative teaching from Constructivist approach and Socratic method of teaching from Existentialist approach. This study will help to understand the role of these two specific teaching methods in the development of creativity. To fulfill the objectives of the study, researcher organizes the structures, principles, aim, curriculum, teaching methods and the role of teachers of the two educational philosophies. The researcher also combines the basic theory of the specific two teaching methods related to creativity. At the final phase of this study, it is critically analyzed the role of the two specific teaching methods on the development of creativity.

Key words: Constructivist approach, Existentialist approach, Cooperative teaching, Socratic method, creativity

Introduction:

After the Covid 19 period the world is going through a crisis of job security and economic stability. The world is also vibrating with the very serious issue of Physical and mental health simultaneously. Now society becomes more realist and objective attitude towards children's future. So the parents and the education system is becoming more job oriented, skill oriented and more dangerously competitive mindset. At that point, Learning without burden, Child centric education, Child is the creator of their own knowledge etc has in their

bookish knowledge only. By ignoring children's interest, attitude, instinct it is not only burdening education to the child but also demolishing their creativity, inner entity and their existence also. The main purpose of education is to develop the inner qualities of every child. It is also expected that her role in the society will be positive and influencing the maximum number of people. Constructivist Approach and Existentialist Approach are the two philosophy of subjectivity which can flourish learner's creativity which can also fulfill the needs of every child and the society.   At this situation, by this paper Researcher wants to study on the role of Bipolar Model of Subjectivity i.e. constructivist and Existentialist teaching approach on the development of creativity.

Objectives:

  i)   To study on the conceptual differences between Constructivist Teaching Approach and Existentialist Teaching Approach.

  ii) To study on the differences between Constructivist and Existentialist teaching strategies.

  iii) To study on Cooperative teaching and Socratic method of teaching

  iv) To study on the role of Cooperative teaching and Socratic Method of teaching in the development of creativity of students.

Research Method:

This study is descriptive and analytical in nature. For fulfilling the purpose of this research, many empirical works on this topic are analyzed and are selected the major elements, principles and characteristics of the concepts of studied area. Finally, a critical analysis is done between the concepts for the betterment of the two teaching strategies.

Constructivism and its strategies:

Constructivist perspectives are the grounded in the research of Piaget, Vygotsky, the Gestalt Psychologists and John Dewey. There are two types of Constructivism A) Subjective and B) Social, but both the Constructivist psychologists agree in mainly in two central ideas, 1) learners actively constructs their own knowledge (Woolfolk, A, 2014) 2) social interactions are important in this knowledge construction process (Bruning, Schraw & Norby, 2011). According to this philosophy knowledge cannot be acquired or transferred to the students. Knowledge is constructed by the learners with their activeness, pre-experiences, social interactions and thinking. Here knowledge is subjective which may vary from man to man. It stresses on mainly the internal direction of their thinking. So it is cleared that constructivism is the philosophy of individual

differences, subjectivity, knowledge construction and learners activeness. It is also known that from NCF 2005 to NEP 2020 almost all the educational organizations advocated for the constructivist teaching approach.

From this philosophy there are many strategies evolved such as 5E model of teaching, Inquiry and problem based teaching, cognitive apprenticeships, reciprocal teaching, cooperative teaching, Technology based teaching etc. In this study, cooperative teaching strategy is taken as a focus area to the development of creativity from the constructivist approach.

Existentialism and its strategies

React on works of Hegelian objective Idealism, Soren Kierkegaard developed this philosophy in the mid time of nineteenth century. And it has speeded through the works of Fredrich Neitzche, Gabriel Marcel, Karl Iaspers, Martin Heidegger and famous Laureate Jean-Paul Satre. Existence of human being is the main theme of the philosophy of Existentialism. Existence means not only live in the world but live with her own freedom, own choices and feelings of self identity. It may be described by the three main elements of philosophy. According to this philosophy, knowledge (epistemology) or truth is not permanent, all is changeable. Knowledge must be gathered through participation. Here, hand experience is most important. Secondly, "Existence preceeds Essence" means "I am exist therefore I think". Essence or generalization of human nature comes after the man who is free by nature. It emphasizes on the uniqueness of every human being. And thirdly (Axiology), human being makes sense on her responsibilities yet she is free by nature. According to Satre, by their willing to be a God in subconscious mind, human beings do their all duties and responsibilities and generate value system. Socratic method of teaching is the best strategy from the Existentialist point of view to reach every learners. So, Socratic method of teaching is accepted for the study and explained the role of it to the development of creativity.

Differences between constructivist Approach and Existentialist Approach in Education:

The two approaches are based on individual model of teaching, where learners are the most important in the center of education. From the outer side may be seen that both approaches are same in their teaching process, but there are many differences in the area of aims, curriculum, teaching methods and role of teachers in the education system.

➢ **Aims of Education:** Honebein (1996) summarizes the seven pedagogical goals of constructivist learning environments:1) Teachers must provide experience with the knowledge construction process, 2) To provide experience creating multiple perspectives, 3) To embed learning in realistic situation, 4) To inspire ownership in the learning process, 5) To make learning in social experience, 6) To use the multiple modes of representation, 7) To encourage on deep thinking on the knowledge construction process. Where, Existentialist Approach aims at the development of authenticity, self-awareness, decision-making ability, responsibility, the capacity to deal with tragic circumstances, social adaptability and development of subjectivity, self-actualization and creativity in children.

➢ **Curriculum:** In Constructivist approach, the emphasis in the curriculum is on broad ideas that start with the whole and then develop to include the components. Primary sources of material and manipulative materials are both considered materials. And in the other side, Existentialism rejects the idea of outlining a course of study. The curriculum must be chosen by the student based on her individual needs and skills. Existentialists would concur that while there should be some basic information passed down about the nature of the cosmos in general, the curriculum must also address current issues in the humanities, economics, and politics. Knowledge must be learned through involvement.

➢ **Teaching Method:** Knowledge construction process is the learning-teaching process in Constructivism theory. It requires both learners own constructing process and also the social interaction process. Here, in the teaching processes, students will actively construct their knowledge with the help of collaboration, group work and activities. But Existentialists prefer the Socratic method of instruction because it is private, close, and an I-thou relationship. Social interaction, group work, activities are not important role in the teaching process.

➢ **Role of teacher:** Constructivist teacher's main duty is to foster a cooperative problem-solving atmosphere where pupils take an active role in their own education. According to this viewpoint, a teacher facilitates learning rather than instructs it by helping students construct their own knowledge. The function of the teacher is collaborative and negotiation-based. In an existentialist educational model, the teacher's

job is to guide students toward self-realization and an understanding of the meaning and purposes of life.

➢ **Criticism:** Its lack of structure is its main drawback. For some children to succeed, highly organized learning environments are necessary. Additionally, it does away with traditional grading and instead emphasizes students' evaluations of their own progress. This could result in pupils falling behind because teachers might not be aware of which students are struggling without standardized grading. The main criticism of existentialism is in its main theme that is the personal experiences or feelings specially the negative side of life like distress, angst, death etc. It does not give attention to the other sides of life like enjoyment, success in life and societal needs. So it is called 'psychologizing, is not philosophizing'.

Both the approaches give important on 'self as agent' of knowledge construction, subjectivity and a variety of teaching strategies. After the discussion on the two quite similar approaches, it is analyzed that Constructivist approach is developed on the view of epistemological point of view and Existentialist approach is developed on metaphysical and humanistic point of view.

Cooperative teaching and Constructivist Approach

According to Olesen and Kagan (1992), cooperative learning is a classroom activity in which the exchange of information is socially structured between learners and in which every learner is responsible for her understanding for the materials as well as the others' understanding for the materials at the same time. Brown (1994) defines **heterogeneous students work together** on materials presented by the teacher in order to achieve a specific task. Johnson and Johnson (2002) focused on the **social skills** which is one of the principles of cooperative learning. They stated that it is important for the students to believe that **every individual is important** for the group in order to make the cooperative learning groups cooperative in nature. It was also stated that **responsibility of each learner** for his understanding as well as the understanding of the whole team. **Reward** should be a part of cooperative learning process so that each learner should maximize his efforts to understand and motivates the other team members to increase their understanding for the success of the team. The benefits of this teaching include boosting interest in learning, reducing anxiety, and improving language proficiency in addition to enhancing social skills and optimizing the level of benefit.

As a student-centered teaching strategy, cooperative learning links its results to the constructivist learning theory, which holds that "learners are in control of constructing their own meaning in an active way" (Almala, 2005, p.10). The proponents of constructivism contend that "learners are active organisms seeking meaning" (Driscoll, 2000, p.376). Students actively expand and deepen their knowledge during the learning process through social interaction, experimentation, reflection, and observation (Brooks & Brooks, 1999).

Socratic method of teaching and Existentialist Approach

Existentialists favour the Socratic style of instruction because it is Knowledge and wisdom are acquired by the mutual interaction of two living beings, the teacher and the taught, in a private and intimate. In existentialism, interpersonal relationships are more important than schedules. That must develop student's free thinking and motivating to gather knowledge and construct her own findings.

The Socratic method of education involved asking questions, clarifying responses, and then raising the subject again and again until an agreeable resolution was achieved. The teacher uses carefully crafted questions to try and elicit knowledge from the students. By looking for the answers to their teachers' questions, students become aware of how their own minds function. She learns the truth as a result and accepts it.

i) Existentialists support **individualized instruction** to help students develop their entire selves, emphasizing their aesthetic, moral, and emotional selves over their scientific, logical selves. She has to grow in his ability to love, respect, and emotionally react to the world.

ii) Sartre values on **play** above seriousness. The individual can unleash all of his imagination when playing. The drama and the book, rather than the treatise and the lecture, have been seen by Sartre and Marcel to be more natural and effective vehicles for some of their teaching and philosophy. Because the appeal is to both the feelings and the reason at once, ideas in both the novel and the drama can be embodied in real characters that fight and react.

iii) The existentialists advise in the **diversity in teaching** so that we first consider students as unique people and provide them the opportunity to actively participate in the development of their own education and lives. Some students learn best using one method, while others prefer another. They should have access to several learning.

iv) Students are encouraged to work **Self-learning** that will help them gain the necessary knowledge and abilities. In general, reflective mental processes are stressed. Existentialist approaches put the individual at the centre. Learning is self-paced, self-directed, and involves a lot of one-on-one time with teachers who are open and honest with each student.

Creativity development and nurturing

Social environment is full of creativeness which as the unique nature of the human mind may be defined as the innate capacity to think or create something new. Its main factors are the a) fluency b) originality c) flexibility d) elaboration. In the inner stage, divergent thinking is the major cause of creativity.

According to C. Rogers, personality creativity involves the individual investigating his or her own inner psychical environment. Through this exploration, the individual develops new adaptive behavioral patterns and overcomes whatever limitations they may have while dealing with others. C. Rogers says "A person who has once engaged in the creative process will no longer be able to function without it. Creativity is our lifeblood and our essence" (Rogers C., Freiberg H. J. 2002).

Creativity involves some common characteristics which can be nurtured using some appropriate measures. Universal and innate capacities are the most common characteristics of creativity. Although many researches show that creativity is inborn capacity and education, training, experience cannot be fostered. But, there is also said that it is developed by the help of social environment.

Role of Education

Like other sides of development of human being, it is necessary to stimulation and nourishments. Like a high quality tea leaf needs its proper environment and nurturing for its fullest taste, creativeness of every child needs proper environment and guidance. There are many techniques to develop creativity in the students. To find out the most used technique for creativity development from 120 creative technique, Leopoldino, K. D. M et al. (2016) selected the major creativity techniques as Storyboarding (Vance, 1982), Morphological Analysis (Zwicky,1969), Lateral Thinking (De Bono ,1970), TRIZ (Altshuller, 1984), Six Thinking Hats (De Bono, 1970), Force field analysis (Lewin, 1947), Synectics (Gordon, 1961), Brainstorming (Osborn, 1963), Brainwriting (Rohrbach,1969).

They have shown that Brainwriting and brainstorming are mostly used in the research work. Here are the main points need to keep in mind fostering creativity, they are…

1. Freedom in expression
2. Removal of external pressure and fear
3. Give enough time
4. Providing specific opportunities and creative resources
5. Inspiring for originality
6. Flexibility in curriculum
7. Focus on open ended question in the evaluation system
8. Relevance of the work

Creativity techniques that develop this capacity through individually and collectively need to be understood to be better applied. By the use of constructivist teaching strategy and Existentialist teaching strategy, creativity can be fostering in the classroom.

Cooperative learning and Creativity:

If we observe on the nurturing elements of creativity and Cooperative learning, there is a positive relation between these two concepts. For the development of creativity, freedom of a learner is the main point which is the base of Cooperative teaching. In cooperative teaching, every individual and their innate capacity is important, which leads to flexibility in curriculum and evaluation system. Heterogeneous students work together with the help of each other which can remove external pressure and fear of the students mind. By rewarding and providing appropriate learning resources to the students can inspire for originality and creative expression. By offering enough time to the groups, it develops the creativity by fostering illumination stage of creativity.

Catarino, P. et. Al (2019) showed the positive results that promoting creative thinking and Mathematical Creativity in Higher Education was greatly influenced by the cooperative learning. Gunawan, A. H (2016) also experimented to improving students' creativity using cooperative learning with the help of virtual media which developed creativity in students. Today's society places a high value on the ability to think creatively. According to Kim and Song (2012), creativity is recognized as being essential to business, research and development, the arts, and many other societal sectors including science and technology (Badran, 2007).

Socratic method of teaching and Creativity

Existentialism holds that educational approaches must foster children's creative capacities. For existentialists, "education for creativity" is of utmost importance (Seetharamu, 1978, p.86). They place a strong emphasis on using teaching methods that tap into students' feelings, emotions, creativity, and deeper understanding of life.

Socratic method is predicted on the idea that while information is innate, it cannot be extracted without professional assistance. The same idea is oriented with the creativity. Learner's creativity is developed by nurturing her inner qualities. It can be found nurturing elements of creativity in this method of teaching. Individualized instruction can provide specific opportunities and creative resources, habit of self-learning comes from freedom, character playing can remove external pressure and fear by expressing herself freely and diversity in teaching make curriculum and evaluation system flexible. All the above statements clearly show a very positive relation between creativity and the Socratic method of teaching.

Critical Analysis:

According to a study by Marashi and Khatami (2017), cooperative learning has a considerable positive impact on the creativity and motivation of English as Foreign Language students. In their 2014 study, John and Meera contrasted teaching mathematics to secondary school students using cooperative learning against an activity-oriented approach, and they came to the conclusion that cooperative learning was more effective at cultivating critical thinking abilities. According to a study by Lince (2016), junior high school students who participated in cooperative learning activities improved more than those who received traditional instruction in their capacity to think creatively about mathematics. In a cooperative environment, reciprocal discussion of various ideas enhances creativity, which does not fare well in a competitive or individualistic environment.

After analysis the elements of creativity and existentialism, it shows that they are complimentary to each other. Being creative is vital for individuals as well as for society. Since existentialism allows for the possibility of personal experiences that could potentially involve such encounters bring out the creative spark that is already there in each person. It is acknowledged that she has the creative potential to transform society and take it in new directions. Individuality development is a goal of existential education. Man can only concentrate on his own development and subsequent advancement when he takes his identity as an

individual seriously. The most comprehensive individualist philosophy at the moment is existentialism. It would not be accurate to say that existentialism emphasizes individualism too much. The self that emerges from individual experiences, internal monologues, and reflection is fundamentally creative and may contribute to society through the I-Thou relationship, which is incredibly human and educates others about real-life experiences.

Socratic method of teaching is based on personalized mode of interaction. So, it is like impossible to implement this method of teaching widely to our country for the development of creativity, where the teacher student ratio is not satisfactory and there is no enough time to complete the huge syllabus in the existing evaluation system also by fostering creativity. It is also challenges to feel and understand every child for a teacher. In the other hand, Cooperative teaching is based on cooperation of every student in a group which can bother or limit their thinking as they cannot think and act according to their own pace. Besides, in cooperative teaching learning, responsibility of each student could make sense of an extra load in their thinking process.

Conclusion:

From the above discussion, there is no doubt about the positive influence of two teaching methods on the development of creativity. Existentialism aims to inculcate ideal of love in children and choice making power in individuals. Both the qualities have power to develop creativity as well as unlimited progress in the society. Cooperative teaching aims to develop their own knowledge according their interest, attitude and thinking which would fulfill their innate capacity to innovate on their own field. Cooperative teaching aims to develop creativity with the help of others students and teachers where as Socratic method of teaching is totally based on interaction between the student and the teacher. But, there are some pins which may inject in the process of smooth implementation of the two teaching methods. So, here need a perfect model of the two teaching approaches for 'properly planned, deliberate and conscious efforts on the part of teachers, parents, numbers of the society, Govt. as well as the children themselves'.

References

1. Mangal, S. (2021). *Advanced Educational Psychology*. PHI Learning Private Limited.
2. Lopes, J., Silva, H., Catarino, P., Morais, E., & Vasco, P. (2019). Cooperative learning on promoting creative thinking and mathematical

creativity in higher education. *REICE. Revista Iberoamericana Sobre Calidad, Eficacia y Cambio En Educacion*, *17*(3), 5-22.

3. Harjono, A., & Sahidu, H. (2018, April). Improving students' creativity using cooperative learning with virtual media on static fluida concept. In *Journal of Physics: Conference Series* (Vol. 1006, No. 1, p. 012016). IOP Publishing.

4. Tan, S.(2018). Fostering learner creativity through a constructivist-based creative pedagogy.

5. Yassin, A. A., Razak, N. A., & Maasum, T. N. R. T. M. (2018). Cooperative learning: General and theoretical background. *Advances in Social Sciences Research Journal*, *5*(8).

6. Marashi, H., & Khatami, H. (2017). Using cooperative learning to boost creativity and motivation in language learning. *Journal of Language and Translation*, *7*(1), 43-58.

7. Leopoldino, K. D. M., González, M. O. A., de Oliveira Ferreira, P., Pereira, J. R., & Souto, M. E. C. (2016). Creativity techniques: a systematic literature review. *Product: Management and Development*, *14*(2), 95-100.

8. Lince, R. (2016). Creative thinking ability to increase student mathematical of junior high school by applying models numbered heads together. *Journal of Education and Practice*, *7*(6), 206-212.

9. Mynbayeva, A., Vishnevskay, A., Sadvakassova, Z.(2016). Experimental Study of Developing Creativity of University Students. Procedia - Social and Behavioral Sciences, (Vol. 217, P. 407-413)

10. Gunduz, N., & Hursen, C. (2015). Constructivism in teaching and learning; Content analysis evaluation. *Procedia-Social and Behavioral Sciences*, *191*, 526-533.

11. John, E. B., & Meera, K. P. (2014). Effect of cooperative learning strategy on the creative thinking skills of secondary school students of Kozhikode District. *IOSR Journal of Humanities and Social Science*, *19*(11), 70-74.

12. Woolfolk, A. (2014). *Educational Psychology*. Pearson.

13. Iram, A.(2013) A critical study of the existentialistic view of education and its relevance to human existence and progress.

14. Tran, V. D. (2013). Theoretical Perspectives Underlying the Application of Cooperative Learning in Classrooms. *International Journal of Higher Education*, *2*(4), 101-115.

15. Bruning, R. H., Schraw, G. J., & Norby, M. M. (2011). Cognitive Psychology and Instruction (5th ed.). Boston, MA: Pearson.

16. Lin, Y. S. (2011). Fostering creativity through education–a conceptual framework of creative pedagogy. *Creative education*, *2*(03), 149.

17. Göktürk, D. (2010). The role of constructivist approach on creativity in primary school music curriculum in the Republic of Turkey. *Procedia-Social and Behavioral Sciences*, *2*(2), 3075-3079.

18. Almala, A. H. (2005). A constructivist conceptual framework for a quality e-learning environment. *Distance Learning*, *2*(5), 9.

19. Horng, J. S., Hong, J. C., ChanLin, L. J., Chang, S. H., & Chu, H. C. (2005). Creative teachers and creative teaching strategies. *International Journal of Consumer Studies*, *29*(4), 352-358.

20. Honebein, P.C. (1996). Seven goals for the design of constructivist learning environments.

21. Kagan, S. (1992) Cooperative learning. San Juan Capistrano, CA: Resources for Teachers Inc.

22. Seetharamu, A. S. (1978). *Philosophies of education*. APH Publishing.

ACCOUNTABILITY OF TEACHERS IN ELEMENTARY EDUCATION IN RURAL WEST BENGAL: A STUDY

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ABSTRACT

This paper is field-based on rural elementary education (Class-I-VIII) in West Bengal in particular and in India in general is regulated by the indicators of school education like schoolenrolment and out of school children, reading abilities of school children, type of elementary schools and tutoring, school observations, RTE norms and standards for a school performance levels etc. In West Bengal the problems like, teachers' accountability, inadequacy of TLMs, teachers appointment and transfer, mid-day meal administration, teaching and training, diversion of funds, absence of school inspection in regular intervals, unsatisfactory physical infrastructure, child labour, spread of private tuitions etc. have been observed in the rural schools of West Bengal. In order to mitigate all these problems, the strategies have been devised such as: implementation of RTE Act, 2009 with a prepared road map accompanied by a time framework; enhancement of functional literacy; increasingenrolment and retention in rural schools; removal of child labour; proper implementation of mid-day meal programme with effective monitoring mechanism; promoting girls education for the backward communities through KGBV; accelerate the launch of special schools under NCLP for working children in the age group of 9-14 years; establishment of additional schools in remote areas of rural population, xi. Improving the school infrastructure with stress on ICT based infrastructure etc. Besides, proper implementation of the RTE indicators with quality assurance measures of school education and effective management as well as governance will visualize rural development of West Bengal through school education as the key for rural development of India in 21st century.

Keywords: Rural Education, Elementary Education, Problems, Strategies.

INTRODUCTION

The State, West Bengal is ranked 17th (68.11%) in the rural population of India (68.84%) as per the Census-2011. It reveals a positive trend in the proportion of the rural population which has been declined from 72.19% in the Census – 2001 to 68.84% in the Census-2011. The literacy rate of West Bengal (77.08%) is more than the India's literacy rate (74.04%). The literacy rate of the rural population of West Bengal is 72.97% as compared to that of India's rural literacy rate (68.91%). Promotion of rural education by every State and

U.T in India is essential for inclusive development of our country. Rural Elementary Education(Class-I-VIII) in West Bengal in particular and in India in general is regulated by the indicators of school education like school enrolment and out of school children, reading abilities of school children, type of elementary schools and tutoring, school observations, RTE norms and standards for a school performance levels, pupil – teacher ratio, classroom teacher ratio, drinking water provision and availability, availability of toilets and usability with facilities for girls, availability of library facilities with books and computers etc. Some of these data are as under.

PROBLEMS IDENTIFIED

- *Teachers' Accountability:* Elementary Education in the rural areas of West Bengal is facing with the problem of teachers' accountability. The teachers use to neglect in their duties not by taking classes, not doing cultural and sports activities as per the annual calendar of the institution. There is neither transparency nor accountability in their works and take leave without record and leave the school as early as possible. Asa result, they negatively interpret teaching as a mission and then as a profession not adhering teaching is the democratic of all the professions.

- *Inadequacy of TLMs:* Teaching-Learning Materials (TLMs) although developed are not properly available to the students. The use of the TLMs is poor and not popular.

The activity based and innovative methods of teaching are not used by the teachers which makes the teaching uninteresting and dull.

- *Problem of Teachers Appointment and Transfer:* There are many schools in the rural areas of West Bengal running with one / two teacher (s) where there is the urgent requirement of more teachers as per the student strength. The concept of sanctioned post in one point and teacher transfer in another point does not follow any rule and the temporary arrangement of teachers as

para or part time teachers is renewed year – after-year to meet the requirements.

- *Mid-Day Meal Administration:* In October, 2007, the Mid-Day Meal, Scheme (MDMS) was extended to the children of Upper Primary Classes (VI – VIII) initially in 3,479 Educationally Backward Blocks of the Country including West Bengal. From 2008 – 09 i.e., w.e.f. 1st April, 2008, this scheme covers all children studying in Govt., Local Body and Govt. Aided Primary and Upper Primary Schools and the EGS/AIE Centers including Madarsa and Maqtabs supported under SSA of all areas across the Country. In addition to this, although the Govt. of India have brought up some changes in the scheme for its effective implementation of the scheme, the following problems have been observed in the rural primary schools of West Bengal.-

  i. Lack of management of the scheme because of poor interest and attention,

  ii. Delay in receiving money / materials of MDMS by the head of the schools even if after giving the requisition,

  iii. There lies differences in the quality of rice between urban and rural schools, and

  iv. Inability of the teachers to retain the students in the schools after Mid-Day Meal is served which is acute in the rural areas.

- *Unsatisfactory Physical Infrastructure:* The Physical Infrastructure in the rural schools of West Bengal is still in unsatisfactory condition. With regard to boundary wall, drinking water facility, usability of the toilet facilities, separate provision for girls' toilet, library facilities etc. are the unsatisfactory aspects of the physical infrastructure of the schools.

- *Teaching and Training:* The Teachers in order to make their teaching activity based and joyful for the elementary school learners are required to be exposed to theorientation programmes. In West Bengal there are 1, 50000 (One Lac Five Thousand) in-service teachers out of which 75,000 (Seventy Five Thousand) in class I – V and 30,000 (Thirty Thousand) in class VI – VIII are serving in different Primary and Upper Primary schools are untrained. In order to mitigate this backlog of untrained teachers, the West Bengal Board of Primary Education (WBBPE) in agreement with the NCTE, New Delhi is providing in service training to those teachers for their job security and stability to be completed by 31st March, 2015 and again

extended up to April, 2019 through ODL mode as per the RTE, 2009. Although teachers training is the most important intervention of SSA with the provision of; a) 10- day in-service training for all teachers each year, b) 30 – day induction training for the newly recruited teachers, and c) 60 – days on job-training for the untrained teachers for their professional development and pedagogical enrichment, this creates a problem for the teachers to deliver good teaching in the class room. It happens due to the following factors in the context of West Bengal.

i.   ill planning of the teachers training programmes,

ii.   several agencies are engaged in providing the training programmes which lacks consistency,

iii. many teachers do not take initiative and interest to implement the pedagogy learnt during training period in their classroom teaching and

iv.   many teachers feel that training is not always effective for which they do not become motivated to implement the learning strategies they learnt in the training programmes.

Besides, training has been the mandatory criterion for appointment of teachers for which the teachers will be appointed only with the requisite professional training degree and academic qualifications fixed by the NCTE. It is a problem severely observed in the rural primary schools of West Bengal, which is on the spot light of discussion to be solved in near future as per the regulation mandated by the RTE, 2009.

- *Diversion of Funds:* SSA, the Centrally Sponsored Scheme of the Govt. of India provides financial support for; a) Construction of building for Primary and Upper Primary Schools, b) Construction of additional classrooms, drinking water and toilet facilities, boundary walls, kitchen shed etc. c) Construction of KGBV and residential hostels, d) Repairing works for school buildings, e) Teacher training etc. are not utilized properly in time. The funds earmarked for different purposes under the SSA are being diverted. It creates a big problem for the progress and development of elementary education in West Bengal in time.

- *Absence of School Inspection at regular intervals:* In the educational administration and supervision at the elementary school level in West Bengal, the Sub-Inspector of Schools (SIS) are entrusted with the inspection of the schools. Each SIS would have been given more than '80' schools for inspection and supervision. It is a matter of great concern that they are

engaged in attending the meetings which are supposed to be held in summers, to fill-up a variety of evaluation forms, keeping the service books of elementary school teachers and disbursal of their salary and pension and also used to manage the salary / pension related queries etc. As a result, they fail to discharge their main functions-inspections of schools, monitoring of classroom transaction and teachers effectiveness. As there are many vacancies in the S.I of Schools posting for a long time, the existing S.I of Schools do not get considerable time to visit most of the schools even once in a year.

- *Spread of Private Tuitions:* It has been revealed from the Annual Status of Education Report (RURAL) – 2010 -2013, the trend of private tuition is more in the Govt. Primary and Upper Primary Schools as compared to the Private Schools in the rural areas of West Bengal. The main reason behind it is parents being imitated by the city /urban areas parents have developed the tendency to send their children to private tuition for better results and guidance. It is empirically found that the tendency to send children to private tuition has low correlation with the quality of teaching in the school as poor teaching in the school is the main reason for sending children toprivate tuition.

- *Lack of Transparent Governance :* Although as per the RTE, 2009 the Primary responsibility for the effective and transparent governance lies with the School Management Committees of Schools, their functions are not up to mark and a failure in the rural areas of West Bengal. It has been proved from the previously prevailed Village Education Committees (VECs). This committee do not spend time in the academic and quality education and if possible spend most of the time on the matters relating to finance and physical infrastructure. Even if the Head master being the academic leader of the school is not aware of the latest Govt. Orders / Regulations which is highly evident in the rural schools of West Bengal.

Apart from this, the problems such as lack of awareness among the parents of poor children, child labour, lack of co-ordination between DPSC and DPO, non-availability of pukka road, electricity, post office, bank, PDS, primary health centre, internet café, solar energy, private schools, news paper and other reading materials have also been observed as problems in the rural schools of West Bengal.

STRATEGIES FOR SOLUTION

- *Implementation of RTE Act, 2009 with a prepared Road Map*: The West Bengal Govt. has prepared a road map encompassing all quality interventions and other provisions, provision of teachers stated in PTR, Training of untrained teachers with the infrastructure. The developed road map in West Bengal as per the RTE Act, 2009 is as under;

  i.   The formulation of State RTE Rules as per RTE, 2009 is under process,

  ii. Fixation of limits of neighborhood for Primary and Upper Primary school areto be done,

  iii. Teacher recruitment becomes necessary to follow the PTR as per guideline. Vacancies should be within 10% of sanctioned strength and sanctioned strength should be as per enrolment,

  iv. The minimum qualifications of teachers should be as per the NCTE notifications,

  v.   Teachers need be engaged in non-academic activities (except census, election,disaster management); also not be involved in private tuition,

  vi. EGS centers are to be closed gradually and formal education is to to be madeavailable only through recognized schools eventually,

  vii. Every primary schools are to be provided with i) Library, ii) games equipments and play materials,

  viii. All unaided schools are to be registered at DI Office, and

  ix. All unaided schools to be instructed to reserve 25% seats for children of weaker sections / disadvantaged groups from neighborhood.

- *Implementation of the revised framework of SSA*: The main objective of Sarva Shiksha Abhiyan (SSA) has to provide useful and relevant elementary education for all children in age group of 6-14 years by the end of 2010. The RCFCE Act,2009 (RTE) makes implementation of compulsory education legally binding in all States / UTs. Accordingly, the National Level Committee's report on, "Implementation of RTE Act and Resultant Revamp of SSA -2010", the principles such as – a) Holistic view of Education as per the NCF-2005, b) Equity, c) Access, d) Gender Concerns, e) Centrality of Teacher, f) Moral Compulsion, g) Convergent and Integrated System of Education Management are focused in the revised framework of SSA for its implementation in the line with the RTE, 2009.

- ***To enhance functional literacy with emphasis on Adult Literacy***: Although the literacy rate of West Bengal is enhancing which is 77.10% as per the Census, 2011and is more than the Census 2001 (68.64%)? The enhancement of functional literacy with stress on adult literacy carries much for development. The National Literacy Mission (NLM) was established in the year 1988 for promotion of adult education in a mission mode which was started functioning in West Bengal in the year 1990. The focus of this movement was to make the adults of 15 - 35 years of age functionally literate. Initially and gradually this programme was covered all the districts of the State (West Bengal) with making improved performance in the literacy level of the adults with varying levels of achievement. This programme progressed well with generating zeal and interest among the parents of rural areas of West Bengal to educate their children with demand from the different social groups of the State especially in the rural areas as of West Bengal who are deprived of getting school facilities earlier. However, this programme did not succeed well through its post literacy campaign and arrangement for continuing education due to lack of monitoring and intervention of Self Help Group (GHG) movement in the rural areas of West Bengal. In order to reduce the literacy gap between Urban and Rural areas, Sakshar Bharat Mission, a Centrally Sponsored Scheme of the Govt. of India developed in 2009 with the purpose to remove the gender and regional disparities in the adult literacy as well as the literacy gap between Urban and Rural adults. Thus, this scheme being the developed form of the NLM focuses on the women and the disadvantage groups in the rural areas is operating now for enhancement of functional literacy among the adults. It will continue up to the 12th Five Year Plan Period (2012-17) with focus on the young adults (15-19 years) and will raise the literacy to 80% and to reduce the gender gap to less than 10%. It aims to achieve 100% literacy in 365 low literacy districts where the adult female literacy rate is below 50% as per the census 2001. Nine districts of West Bengal – Cooch Behar, Jalpaiguri, Uttar Dinajpur, Dakshin Dinajpur, Malda, Murshidabad, Birbhum, Bankura and Purulia come under this category.

- ***To increase the Enrolment and Retention in Rural Schools :*** The Govt. of West Bengal launched a special enrolment drive programme called– Bharati SunischitkaranKarmasuchi-2007 for rural areas in particular and of the State in general. The purpose was to cover the huge number of out of School Children (OOSC). During enrolment drive special attention was given to the

enrolment of girls, minorities, SC, ST along with the enrolment status of primitive tribal groups. This was done with the involvement of VEC/MTA, Gram Sansads with the help of Child Census through special monitoring in the rural areas of West Bengal. For the retention of children up to the completion of elementary education along with the mid-day meal facilities free school uniform, free text books, other TLMs , residential facilities, scholarships etcare being provided in the rural areas of West Bengal.

- **Establishment of Primary Schools in the remote areas of Rural Population:** In West Bengal out of the 20 Districts there are places in the rural areas which don't have any Primary / SSK within 1 km. of habitation. The estimate by 2010-11 shows that there is the need to set up 1,557 new primary schools and 14,165 Upper Primary Schools in order to ensure adequate access with the availability of schools within 1 km. of habitation in the rural areas of West Bengal.

In addition to this, the strategies such as fulfillment of the teacher requirements, strengthening inspection, capacity building of teachers through training programmes, effective monitoring system and good governance etc. will ensure the development of elementary education resulting in the rural education as well as the development of elementary education of West Bengal. As a result, rural education will be a major parameter for development of the Nation by taking the rural segment of West Bengal as a case.

CONCLUSION

The problems faced in the rural schools of West Bengal will be solved gradually through proper implementation of the RTE, 2009. Accordingly, the strategies will be more geared up in the light of problems to make India a full literate Country by 2020. Among the problems observed in the rural areas focus should be on sanitation and drinking water facilities, and functional literacy. Although West Bengal is recognized as a good performer (48.70%) like the States- Kerala, Manipur, Mizoram, Punjab, and Assam which is more than the rural India average (32.67%), poor performance in the States - Jharkhand, MadhyaPradesh, Chhattisgarh, Odisha, Bihar, Rajasthan, Uttar Pradesh, Tamil Nadu, Karnataka for which strategies stated above should be properly undertaken in providing sanitation and drinking water facilities in these States.   In addition to this, it can also be highlighted that 28% of the households have unemployed members as per the Census, 2011 which was 23% in the Census, 2001. Out of this 28% households, over 20% of youths between 15-24 years of age are seeking work as per the Census, 2011. It has also been revealed that in most States including

West Bengal and nationally, the employment situation is relatively better in urban areas than in rural areas. For improvement in this condition of rural adults, there is the necessity of proper acceleration of Sakshar Bharat Mission. As a result, India will be open defecation-free by 2019 and the mission to make Skill India will be successful.

REFERENCES

ASER Center, Pratham (2013). *Annul Status Of Education Report (Rural), 2013*: SurveyResults.

Hazra.A (2011). The challenges of educating rural India. *Kurukshetra*, New Delhi: Ministryof Rural Development.

Twelfth Five Year Plan (2012-17). *Social sectors, Vol.3, planning commission*. New Delhi:Govt. of India:

The Times of India (2013). *West Bengal lags in child labour welfare* (16th June, 2013).

Kolkata: TIO.

The Telegraph (2014). *Govt.'s 'tall' toilet plan raises brows.* (25th August, 2014). Kolkata:TT.

EDUCATION OF MUSLIMS IN WEST BENGAL: A STUDY

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ABSTRACT

Development and education are two facets of the same coin. As we are all aware, education is necessary for optimal development. The cornerstone of each community or country's progress is education. Many historical survey records show that many communities have disintegrated in the absence of education. The prophet Muhammad declared that "education is more sacred than the blood of Sahid shed in combat." No of their gender, caste, or religion, everyone should pursue education for a better quality of life. Muslims are one of the largest minority groups in India, which is known for its many ethnic, religious, and linguistic groupings. According to the 2011 census, 26% of people in West Bengal are Muslims. Everyone should have the right to an education, according to the constitution. Yet a realistic case reveals. Despite different initiatives, the reality is that many societal groups continue to lag behind in education, and a sizable part of their children are still not enrolled in school. Consequently, the obstacle to reaching the goal of universal education is poor participation in schooling (Hussain, Nazmul et al, 2012). The paper's primary goal is to emphasise Bengali Muslims' educational landscape. The paper uses sociological tools to examine secondary sources.

Key words: Muslims, Education, West Bengal

INTRODUCTION

India is a nation of many different ethnic, cultural, and linguistic groups. Individuals who practise several religions coexist in society. One of those making up the nation's largest minority group are Muslims. In terms of absolute numbers, Muslims make up 80176197 people, or 26% of the state's overall population. Muslims are the state's largest minority as well as the second-largest religious group in West Bengal. According to the information that is currently accessible, Muslims continue to be socially and economically backward. Also,

arrangements have been established to provide incentives to the population's weaker segments in order to give them access to facilities that will allow them to fully participate in education alongside other population segments.

Table-1: Trend of Muslims population Growth Rate:

1991-2001	20001-2011
17.77	13.93

Source: Census, 2011 (Provisional)

In West Bengal, there are several groups of people belonging to various races, religions, languages, and cultures and they ruled Bengal for several hundred years. Muslim rule influenced profoundly socio- religious structure of the Bengali people. The British came in Bengal in 1690 for trade, but gradually their increased influence resulted in conflicts with *Nawab* in Bengal and with diplomatic efforts and series of conspiracies captured power in Bengal. In 1905 the British for the first time partitioned Bengal on the basis of religion into West Bengal and East Bengal. Again, in 1947 at the time of independence, the province had been divided into two halves between India and Pakistan on the basis of the same religious considerations. The Hindu-majority West Bengal became a part of Indian union and Muslim-majority East Bengal became a part Pakistan named as East Pakistan which later emerged as a independent country as Bangladesh in 1971(Ibid:2012)

Muslims in the Development Debate in India: The Report of the Prime Minister's High Level Committee (popularly Sachar Committee, 2006) on the 'social, educational and economic status of Muslims' propelled the community to the centre of the development debate. The Sachar Committee Report (SCR) outlines that Muslims across most parts of India, as a community are deeply impoverished and suffer from huge illiteracy, a high drop-out rate, depleting asset base, below average work participation and lack of stable and secure employment.

Right to Education Act, 2009 and Rights-based Framework for SSA:

To make elementary education compulsory the 86th Amendment of the Constitution in the year 2002 made provision of the Article 21-A, which states that "The State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine and its consequential legislation". The same has come in to force with introduction of the Right of Children to Free and Compulsory Education (RTE) Act, 2009 throughout India with effect from 1st April, 2010. The salient features of the RTE Act are mentioned below:-

i.   The right of children to free and compulsory education till completion of elementary education in a neighborhood school

ii.   'Compulsory education' makes it obligatory on the government to provide free elementary education and ensure compulsory admission, attendance and completion of elementary education to every child in the 6-14 age groups. In order to make elementary education "free", no child shall be liable to pay any kind of fee or charges or expenses which would prevent him or her from pursuing and completing elementary education.

iii.   The RTE Act mandates that eventually elementary education must be provided by formal and recognized schools. All existing EGS centers (Sishu Siksha Kendra(SSK)and Madhyamaik Siksha Kendra(MSK in West Bengal) should be converted to regular schools or closed down when children are mainstreamed into neighborhood schools.

iv.   It provides for a child not enrolled, whether never enrolled or a drop out, to be admitted to an age appropriate class in a formal school.

v.   It specifies the duties and responsibilities of the appropriate Government, local authority and parents in providing free and compulsory education, and sharing of financial and other responsibilities between the Central and State Government.

vi.   It lays down the norms and standards relating to Pupil Teacher Ratio (PTRs), buildings and infrastructure, school-working days, teacher-working hours etc.

vii.   It provides for rational deployment of teachers by ensuring that the specified pupil teacher ratio is maintained for each school ensuring that there is no urban – rural imbalance in teacher postings. It also prohibits the deployment of teachers for work not related to education, other than the decennial census, elections and disaster relief. Also school teachers should not be involved in private tuition.

viii.   It provides that teachers will be appointed only with the requisite professional training and academic qualifications. RTE (section 26) requires that vacancy of teachers in a government school or government-aided school should not exceed 10% of the total sanctioned strength.

ix.   Every unaided school, imparting elementary education, is to be registered with the appropriate authority (e.g., District Inspector's Office) within a given timeframe. Unaided schools are required to reserve 25% of the seats for children belonging to weaker sections and disadvantaged groups in the

neighbourhood. The State RTE Rules should specify the limits of neighbourhood unambiguously for primary and upper primary schools.

LITERACY RATE OF MUSLIMS:

West Bengal has a somewhat better than average literacy rate than the rest of the country. Compared to the national average of 64.85 percent, West Bengal has a literacy rate of 68.64 percent. West Bengal has an urban literacy rate of 81.25 percent and a rural literacy rate of 63.42 percent. Moreover, there is interreligious disparity in literacy (Waheed, 2006). So, it would be appropriate to assess the literacy levels of the various minority groups (Jawaid, 2007). The Muslim community in Bengal is socially, culturally, economically, and politically backward due in large part to educational backwardness. There aren't many reliable studies on this topic. There has never been a sincere attempt to understand the community's actual situation. Just 57% of Muslims in the state are literate, despite several educational programmes supported by the federal and provincial governments for minorities. It is commonly accepted that the primary reason of less development is illiteracy. The state's role is strongly correlated with literacy level. No nation in the world had ever been able to educate all of its citizens without government assistance (Sen, 2007). Since education is a means of transferring ideas, thoughts, and beliefs across time and distance, it has a significant impact on the quality of human resources (Siddiqui and Naseer, 2004). The only way to overcome societal stigmas and superstitions, promote cultures, and improve society is via education. Since independence much emphasis has been given on education in the country and it made remarkable progress in this regard. Yet, for various reasons, Muslims in India in general have been unable to enjoy the fruits of development and so they continue to belong to the weaker sections of the society.

According to the Census of India 2001, the literacy rate among the Muslims is 59.1 per cent; which is far below the national average (65.1 per cent). Literacy rate in West Bengal (68.64) is higher than the national average; moreover it has 12th position in literacy rate among states of India. It is interesting to note that, in spite of the fact that 25.25 per cent of the total population of West Bengal is Muslim, only 13.75 per cent accounts for the total literates of the state. Moreover, the literacy rate among Muslim is 57.47 percent which is 11.7 percent point lower than the average literacy rate (68.64) of West Bengal. There is no educational indicator except literacy rate on which data are available to show the status of Muslims or for any other religious group. This is a serious constraint in planning for the education of Muslims. Muslims in West Bengal are

mainly landless agricultural labours, artisans and poor craftsmen in rural areas and in urban areas, poor labour as mill hands. The situation has been exacerbated with the steady decline of industry in West Bengal (Hasan, 2005). Thus, Muslims are almost totally dependent on the state for education, and this has resulted for some unexpected and poignant outcomes (Hussain, Nazmul et al,; 2012**).**

Table-2: Muslim Literacy Rate in Comparison to Other Religious Communities

Population	Hindus	Muslims	Christian	Sikhs	Buddhist	Janis	Total
Male	81.12	**64.61**	77.20	91.37	83.09	96.46	77.02
Female	63.09	**49.75**	62.30	81.98	66.22	88.87	59.61
Total	72.44	**57.47**	69.72	87.19	74.73	92.81	68.64

Source: Nazmul Hussain, Md Zahir Abbas and Saba Owais: Islam and Societies,2012.

Education:

Despite making up 25.25 percent of West Bengal's population, 32.3 percent of all students registered in the state's primary schools in 2009–10 were Muslims, according to the NUEPA report. 13.48% is the solely the national average (as of 2009–2010). 2,53,779 students, or 25.27% of the Madhyamik examinees in West Bengal's class of 2011, out of the state's 10,04,931 total pupils, are Muslim. 1,48,777 of the 6,38,240 students taking Higher Secondary exams in 2011—or 19.85% of the total—are Muslims. 49,588 Muslim students from the state took the Madrasah Board Test in 2011. The 300 acres of land made available by the West Bengal government will be used to build this AMU regional campus. In 2007, the Calcutta Madrasah was transformed into Aliah University, which is currently providing five The Aliah University is already operating with some faculties and numbers of new posts were created in various departments of the university till 2010.

Educational Loan: According to the government report of West Bengal (March-2011) that there are 2310 student are enjoyed rupees 713.25 (in lakh) as an educational loan.

Challenges: The West Bengal government has launched numerous programmes and is working to implement the Sachar and Ranganathan Misra committee's report based on its capabilities, but Muslims' participation in higher education is minimal primarily due to two factors, one from within the community and the other from other people's ideas. As a result, Bengali Muslims have more freedom to send their students to the maktab or madrash in their community. Some of them are so fundamentalist in their outlook that they aren't prepared to pursue

other interests. The second issue is primarily brought about by strong religious organisations. They sometimes accuse Muslims of being antisocial and say that some people are not mentally capable of renting a home.. Even though, the state of West Bengal has no occurring unexpected violence like rest of the country.

Conclusion : For the socioeconomic advancement of Muslims in West Bengal, we must concentrate on their educational needs, which include facilities such as dormitories, restrooms, common areas (especially for female students), technical education such as computer use, classes for spoken English, and sports, among other things. Government coaching for admittance into various government positions has begun, but it still has to be regularly monitored.

REFERENCES:

[1].   Ansari, A. (1992): Educational Backwardness of Muslims, *Economic and Political Weekly,* Vol. 27, No. 42 (Oct. 17, 1992), pp. 2289-2291.

[2].   Broach, V.K. and Iyar, S. (2005): The Influence of Religion and Caste on Education in Rural India, *Journal of Development Studies*, Vol. 41, No. 8.

[3].   Census of India (2001): *Final population Totals*, West Bengal.

[4].   Dreze, J. and Kingdon, G.G. (2001): School Participation in Rural India, *Review of Development Economics*, Vol.5, No.1, pp. 1- 24.

[5].   Fazal,T.(2013). *Millenniam Development Goals and Muslims* of India, Oxfam India.

[6].   Govt. of India (2006): *Social, Economic and Educational Status of Muslims Community of India* –A Report: Prime Ministers High level committee, Cabinet Secretariat, Government of India, New Delhi (Chairperson Justice Rajendar Sachar).

[7].   Hussain, N. and Siddiqui F.A. (2009). Literacy and Socio economic Marginalization of Muslim Population of Malda District, West Bengal (India), Arab World Geographer, Vol.12, No.1.

[8].   Hussain, Nazmul et al, (2012**).** Muslims in West Bengal: Trend Of Population Growth And Educational Status, *Islam and Muslim Societies*,Vol.5, No.1,pp45-50

[9].   Jawaid, M. A *et al* ed, (2007). *Minorities of India- Problems and Prospects*, Indian Council of Social Science Research in association with Manak Publications Pvt. Ltd, New Delhi, p.33-36.

[10]. Jayachandran, U. (2002): *Socio-Economic Determinants of School Attendance in India,* Delhi School of Economics, and Centre for Development Economics, Working paper No.103, June.

Study Involvement of IX Standard Students in Kanchipuram District: A survey

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Abstract

Study involvement plays an important role in students' academic performance and success. It is necessary to know every students behaviour of in their study involvement.   The objective of the study is to find out the study involvement of IX standard students. The researcher adopted survey method. The investigator has adopted random sampling techniques to collect the data. The sample consists of 300 IX standard students at Kanchipuram district in Tamil Nadu. The collected data were analysed through using descriptive, 't' test and ANNOVA statistical techniques. The descriptive analysis showed that moderate level of study involvement among IX standard students. The 't' test showed that there is a significant difference between rural and urban as well as boys and girls IX standard students in their study involvement. Rural students have more study involvement than urban. Girls have more study involvement than boys. ANNOVA results revealed that there is no significance difference among IX standard students study involvement with respect to mother's income and it also showed that there is no significance difference among IX standard students study involvement with respect to father's educational qualification.

Introduction

In every individual achievement of goal depends on their involvement. In learning process learner required study involvement to learn their learning with their own interest and effective performance in their learning. Students involvement refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their

education. There is a strong belief in study involvement has a strong positive effect on students academic performance. Involvement has been conceived in different ways by different authors the concept of involvement which is detained as an identification with the task to be accomplished the degree of involvement is determined by the (i) number of needs satisfied, and (ii) the extent of their satisfaction through the performance of the task. Study involvement in view of Morse and Wingo (1970) implies keen interest in the task, working with persistence and imagination and sharing the responsibility for own learning. Yan Off (1973) defined study involvement as a degree of affect or feeling of being actively involved in one's own learning process. Involvement in studies not only makes the learning a pleasant activity but also yields enhancement in learning outcomes of higher order thinking, develops positive attitudes towards learning and facilitates creative productivity.

Research Reviews

The following research reviews of study involvement are briefly explained to show the importance of study involvement in learning and achievements of the learners. Zedan, Raed (2021) found that Parental Involvement as a Predictor of Classroom Climate, Motivation for Learning, and Learning Achievements The findings indicate that the more learners include their parents in the school day and believe that they support them and believe in the importance of education, and the more the parents participate in school activities and maintain contact with teachers and become involved when a problem arises, their children's motivation and achievement level will be higher. Liu, Yanhui, Sulaimani, Mona F and Henning, John E.(2020) conducted a study on "The Significance of Parental Involvement in the Development in Infancy". This study recommends that parental involvement should be considered as an affluent resource and a useful tool because it could provide rich information about infants' individual needs and positively help infant teachers to improve their instructional skills. Van Houtte, Mieke (2017) researched gender differences in context: the impact of track position on study involvement in flemish secondary education. They found that boys are, generally, less involved in studying than girls, and boys are more affected by track position than girls are, enlarging the gender gap in the lower tracks. Naik, Sapna, Wawrzynski, Matthew R., Brown and Joelle (2017) conducted a study on international students' co-curricular involvement at a university in South Africa. They found that the differences in the continuous learning outcome variables for those international students who were involved in co-curricular experiences to those who held leadership positions within the curricular experiences.

Significance the of the study

Study involvement has been found to be positively related to students' achievement. It is necessary to teachers should understand their learners study involvement to guide them for better performance and success. This process makes teaching and learning process in meaningful way. In each and every students they have their own nature of involvement. Individual difference are there in involvement they have creative involvement, gaming involvement and extra - curricular involvement. Here the study involvement satisfy the learners involvement in their subject. To create study involvement behaviour among learners the teacher has to apply various strategies in their teaching and students learning it create high level of study involvement. The researcher analyse IX standard students study involvement behaviour to understand.

Objectives of the study:

1. To find out the level of study involvement among IX standard students in Kanchipuram district
2. To find out the level of study involvement among IX standard students with respect to gender
3. To find out the level of study involvement among IX standard students with respect to locality of school
4. To find out the difference between boys and girls among IX standard students in their study involvement
5. To find out the difference between rural and urban IX standard students in their study involvement
6. To find out whether there is difference among IX standard students with respect to their mother's income   in their study involvement
7. To find out whether there is difference among IX standard students with respect to their father's education in their study involvement

Hypotheses

1. The level of the study involvement of IX standard students is high
2. There is no significant difference between boys and girls IX standard students in their study involvement
3. There is no significant difference between rural and urban IX standard students in their study involvement
4. There is no significant difference among   IX standard students with respect to their mother's income in their study involvement

5. There is no significant difference among IX standard students with respect to their father's education in their study involvement

Method of study

The researcher adopted Survey method to collect the data.

Population for the study

The population for the study consisted of selected school students studied in IX standard at Kanchipuram District in Tamil Nadu.

Sample

The investigator has adapted random sampling technique. To collect data. the tool was administered among IX standard students in eight schools at Kanchipuram District,Tamil Nadu. Totally the sample consisted of 300 students.

Tool used in the study

Study Involvement inventory was used in the study. It was constructed by Dr. (Mrs). Asha Bhatnagar. The tool consists of 40 items. Each item measures the study involvement of the respondent. Each item has answered by choosing any one of the following options. 1. Yes 2. Undecided 3. No.

Validity

Initially the tool was in English. The investigator translated each items English into Tamil language, then the translated items were given to subject experts and they were requested to given their suggestion for establishing the validity of the inventory. The experts verified and analysed all the particulars. They expressed their satisfaction regarding the items preparation based on the objectives, theories and concepts related to the topic what it is supposed to measure.

Reliability

Since the tools has been translated from English into Tamil. The investigator established the reliability. The test-retest method was used to find the reliability of the tool. In order to establish reliability, the investigator administered the study involvement inventory to 50 students from Loyola Higher Secondary School, Kuppyanallur. After an interval of 15 days the same tool was administered to the same set of students and the co-efficient of the reliability was established. The reliability co-efficient is 0.726.

Statistical Techniques Applied

The investigator has applied the following statistical techniques to analyse the collected data.

i. Descriptive Statistics

ii. Differential Analysis

iii. ANOVA

Table 1: Level of Study Involvement IX Standard Students

Variable	Low		Moderate		High	
Study Involvement	No	%	No	%	No	%
	38	12.67	218	72.67	44	14.66

It is inferred from the above table that the IX standard student study involvement level is found that (12.67 %) as low, (72.67%) as moderate and (14.66%) are in high level. It also revealed that most IX standard students have moderate level of study involvement.

Table 2: **Study Involvement Level of IX Standard Boys and Girls Students**

Variable	Boys						Girls					
	Low		Moderate		High		Low		Moderate		High	
Study involvement	No	%	No	%	No	%	No	%	No	%	No	%
	19	11.7	121	74.2	23	14.1	19	13.9	97	70.8	21	15.3

It is inferred from the above table study involvement 11.7 % of the boys have low 74.2 % of the boys have moderate and 14.1 % of the boys have high level. And girls 13.9 % of the students have low, 70.8 % of the students have moderate and 15.3 % of the students have high level. Therefore it is stated as study involvement is moderate in boys and girls IX standard students.

Table 3: Level of Study Involvement IX Standard Rural and Urban Students

Variable	Rural						Urban					
	Low		Moderate		High		Low		Moderate		High	
Study involvement	No	%	No	%	No	%	No	%	No	%	No	%
	27	17.6	107	69.9	19	12.4	17	11.6	109	74.1	21	14.3

It is inferred from the above table study involvement 17.6 % of the rural students have low, 69.9 % of the rural students have moderate and 12.4 % of the rural students have high level. And urban 11.6 % of the students have low,74.1 % of the students have moderate and 14.3 % of the students have high level. Therefore it is stated as study involvement is moderate in rural and urban IX standard students.

Table 4: Independent sample 't' test between the Mean scores of Rural and Urban IX Standard Students Study Involvement

Variable	Rural(N= 153)		Urban(N=147)		't' value
	Mean	S.D	Mean	S.D	
Study Involvement	51.36	9.03	48.59	10.77	2.41*

*Significant at 0. 05% level

From table- 4, it is inferred that the 't' value obtained between rural and urban for the Study Involvement (2.41) is significant at 0.05 level. Thus it is showed that there is significant mean difference between the rural and urban IX Standard Students in their Study Involvement. Rural students have more Study Involvement than urban.

Table 5: Independent sample 't' test between the Mean scores of Boys and Girls IX Standard Students Study Involvement

Variable	Boys (N= 163)		Girls (N= 137)		't' value
	Mean	S.D	Mean	S.D	
Study involvement	48.36	10.98	51.94	8.33	3.21*

*Significant at 0. 05% level

From table- 5, it is inferred that the 't' value obtained between boys and girls for the Study Involvement (3.21) is significant at 0.05 level. Thus it is showed that there is significant mean difference between the boys and girls IX Standard Students in their Study Involvement. Girls' students have more Study Involvement than boys.

Table 6: 'F' test among Mother's income of IX Standard Students Study Involvement

Variable	Source of variation	Sum of Square	Means square variance	df 2	'F' value
Study involvement	Between	306.38	153.19	297	1.54**
	Within	29593.62	99.64		

** Not significant at 0.05 level

From table-6, it is inferred that the 'F' values obtained among mother's income of IX Standard Students in their Study Involvement (0.72)) is not significant at 0.05 level. So it is inferred that there is no significant difference among below 5000, 5001to 10000, 10001 to 15000 and above 15000 to in their Study Involvement.

Table 7: 'F' test among Father's Educational Qualification of IX Standard Students Study Involvement

Variable	Source of variation	Sum of Square	Means square variance	df 2	'F' value
Study involvement	Between	593.91	197.97	297	2.00**
	Within	29306.09	99.01		

** Not significant at 0.05 level.

From table-7, it is inferred that the 'F' values obtained Fathers educational qualifications of IX Standard Students in their Study Involvement (2.00)) is not significant at 0.05 level. So it is inferred that there is no significant difference among illiterate, upto X std, Graduate and professional education to in their Study Involvement.

9. Findings

1. It is found that the IX standard students have moderate level of study involvement.

2. It is found that the IX standard boys and girls students have moderate level of study involvement.

3. It is found that the IX standard rural and urban students have moderate level of study involvement.

4. It is found that there is significant mean difference between the boys and girls IX standard students in their study involvement. Girls' students have more study involvement than boys.

5. It is found that there is significant mean difference between the rural and urban IX Standard Students in their Study Involvement. Rural students have more Study Involvement than urban.

6. The 'F' values obtained among mothers occupation of IX Standard Students in their Study Involvement there is no significant difference among below 5000, 5001to 10000,10001 to 15000 and above 15000 to in their Study Involvement..

7. The 'F' values obtained Fathers educational qualifications of IX Standard Students in their Study Involvement reviled that there is no significant difference among illiterate, upto X std, Graduate and professional education to in their Study Involvement.

10. Discussion

The purpose of the study was to find out the study involvement among IX standard students. Normative survey method was applied to collect the data on study involvement among IX standard students. The collected data were analyzed based on the gender, locality of the students, difference among mother's income. and Father's Education. The descriptive analysis showed that there is a moderate level of study involvement. The 't' value between boys and girls was found that 3.21 and it shows there is difference in boys and girls study involvement. It is concurred with research findings of Van Houtte, Mieke (2017) who found that boys are, generally, less involved in studying than girls, and boys are more affected by track position than girls are, enlarging the gender gap in the lower tracks. Girl students have conscious awareness on their study to achieve the learning goals. They show more interest to learn new information through innovative learning strategies. These kinds of learning habits differentiate the girls from the boys in their study involvement. This research study showed the temperament of study involvement among IX standard students.

Conclusion

The present study showed that the study involvement behaviour of IX standard students. This research has found that the level of study involvement and significant difference between boys and girls in their study involvement. It also found that there is no significance difference among IX standard students with their respect to mother's income and father's education. The study reveals that study involvement behaviour of IX standard students in their various background and nature. It is helpful to teachers to understand students study behaviour and their circumstances. With this awareness teachers apply various strategies to enhance study involvement behaviour among students those who are have less involvement in their study.

References

1. Aseema, & Gakhar,. (2004). Social Stress locality and gender affecting Academic achievement and reasoning ability, Research and Reflection on Education, Vol.04,No.2.

2. Harikrishnan, M. (1992). A Study of Academic Achievement of the Students of the Higher Secondary Stage in Relation to Achievement Motivation and Socio-Economic Status. New Delhi: Fifth Survey of Research in Education. N.C.E.R.T., 1997.

3. Jagpreet Kaur, J. S. Rana & Rupinder Kaur (2010). Home Environment and Academic Achievement as Correlates of Self-concept among Adolescents. Study Home Community School (2009), Vol.3(1) : 13-17.

4. Liu, Yanhui, Sulaimani, Mona F, Henning & John, E. (2020). The Significance of Parental Involvement in the Development in Infancy. *Journal of Educational Research and Practice*, v10 n1 p161-166 2020.

5. Stevens, & Sharon Rence,. (2007). Perception of middle school students Proximal academic abilities: Effects on involvement and communication, Dissertation Abstracts International Vol. 68, No. 6, Sep 2007.

6. Swick, & Danielle, C. (2007). The effects of parental involvement on children's school readiness skills, Dissertation Abstracts International Vol.64 No.8 July 2007.

7. Sebastian, James, Moon, Jeong-Mi, Cunningham, & Matt. (2017). The Relationship of School-Based Parental Involvement with Student Achievement: A Comparison of Principal and Parent Survey Reports from PISA 2012, *Educational Studies*, 43 (2):123-146.

8. Van Houtte, & Mieke,. (2017). Gender Differences in Context: The Impact of Track Position on Study Involvement in Flemish Secondary Education. *Sociology of Education,* 90 (4): 275-295 https://doi.org/10.1177/0038040717731604.

9. Zedan, & Raed,. (2021). Parental Involvement as a Predictor of Classroom Climate, Motivation for Learning, and Learning Achievements. *Journal of Classroom Interaction*, v56 n1 p56-74 2021.

Pandemic covid 19 and Higher Education

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ABSTRACT

Pandemic covid-19 is one of the biggest disturbing and horrible event in last hundred years. Covid-19 had started in December 2019 in wuhan ,China but in very few time almost whole world took on grip of covid 19 . This is the most disastrous disease of the century This is caused by SARS 2 virus and very contagious. These years will be remembered for the pandemic due to this whole world are still facing different kinds of problems and challenges due to covid 19. organisations including early childhood education, primary schools ,secondary schools, colleges and universities etc.it lead to great damage to education systems worldwide, India is not its exception. This paper is proceeded on mainly two issues, 1st effect of covid 19 0n education in India and comparison of past educational status with present covid 19 educational status.

Key words -   Covid 19 pandemic and Higher education Some one says

"If we don't change, We don't grow

If we don't grow We are not living"

Really change is essential, but no one thinks that covid 19 changes the world by 180 degrees. When we see the past since covid 19 period, virus itself makes a various changes. It's changes make our life very difficult. This covid 19 pandemic effects millions and millions of the people, big numbers of people lost their lives and approximately every type of business activities affected. The world stuck due to this pandemic for very long period of time still the situation is not normalised on the basis of day to day activities .Educational system of the world are also not remain untouched from it. The covid-19 pandemic has created the largest disastrous disruption to education system in human history. It affecting nearly 1.6 billion learner more than 200 countries. In India about more than 30 crore students associated with the educational system are affected due to covid-19. The whole education system have collapsed due to this pandemic. In many different areas of India the education system has still not yet normalised.

We found still lower classes in the schools are looking for their physical classroom due to covid-19.

Thousands of school have been shut down and thousands of people are unemployed. Although the government of centre and state are trying to minimise the problems faced by human resources of various educational institutions. There are several unseen scenes and data associated with this pandemic but some statical facts are given below

According to UNICEF:

About 1 billion learner are at risk due to school closures

while more than 90% of the countries adopted digital and broadcast remote learning policies ,In which only 60% did show for pre primary education.

policy measures taken by the government to ensure learning continuity through broadcast or Digital media allowed for potentially reaching 69% of school children in pre primary to Secondary Education globally.

31% of school children world wild cannot be reached by the broadcast and internet based remote learning policies either due to lack of necessary technology asset at home or because they were not targeted by the adopted policies.

online platform where the most used means by the government to deliver education while schools remain closed, with 83% of countries using this method.

only 16% of school children could be reached via radio based learning world wild # Television has the potential to reach the most student about 62% globally

globally 3 out of 4 students who cannot be reached by the remote learning policies. In case of India situation is more worsened.

Over 1.5 million school across India close down due to the pandemic.

large scale digital education is not possible. In India only 24% household have access to the internet according to a 2019 government survey. so we can evaluate the situation.

In rural India the number of far lower with only 4% household having access.

According to UNICEF, the pandemic has immensely battered education system of the world. 90 percent of the world's students population is under closure.

in India over 1.5 million school closed down due to the pandemic affecting 286 billion children from pre primary to secondary levels. This add to the 6 millions girls and boys who were already out of school prior to covid-19.

To fight back the destruction and damage ,Educational organisations across the country depend upon digital mode of education as a solution to fill the gap left by classroom teaching. Digital education or online learning in India came to the central stage and now increasing day by day.

Digital education access is widen the gap between various sectors of the society.

In national capital, when government schools started online classes during the lockdown, the attendance is only 25 to 30 percent.

India is the vast country so effect of covid-19 is different from state to state. Hence effect on education is also varied from places to places within country.

Higher education almost depends upon Digital and online education. According to UNESCO report more than 90% of total student population in the world was affected due to the pandemic. In 1st phase of pandemic, WHO Guideline compelled the government to shut down the organisation of mass gathering. so almost all educational institution, academic year exam and comptetive exam were postponed for indefinite period. This is taken in order to slow down and contain the spread of coronavirus in India. it is affected more than 286 billion young learner in India .Student had to face severe problem at they were not aware of the future examination especially for those students who are in the final year and also those were to face entrance exams. This situation made the Indian education go through an irreversible teaching and Learning crisis. Therefore sudden shift was made from face to face classroom method to the online mode of education. It is like yesterday destructors become today's survivor. online method was considered as the threat but today it has become opportunity .however there were several issues that also started coming of with the introduction of online mode of teaching or Digital mode of teaching in a higher educational organisations.

Changes in education system after covid-19

The impact of covid-19 pendemic can be seen in every sphere of life and when it comes to education, this is the biggest sector that has been adversely affected by this pandemic. it forced many great Nation to enforce lockdown. There by being everything to an abrupt halt for a certain period of time. The outbreak of covid-19 has affect many countries and it made the world to observ social distancing in public space.

"The impact of the covid-19 pandemic on education is both unprecedented and widespread in education history, impacting nearly every student in the world" it

is the statement of UNICEF 2020. The arrival of the pandemic and the the effects of school closure Show massive changes and quick innovation by educator in education system around the world. It changed very fast, many schools and colleges began to offer education remotely. There are three types of changes are viewed frequently , 1st in curriculum ie developmental, individual and evolving ,2nd in pedagogy that is student-centred, inquiry based, authentic and purposeful and 3rd Delivery of instruction that based on both synchronised and asynchronised learning. Online education and Digital education occupy place in place of class room education. Effectiveness of the online education based upon right access to the technology. Internet plays very crucial role for online learning and higher education. In India, all students have not requisite facilities due to different socio economic backgrounds. This situation creates digital divide between between the rich and the poor. So in india, lots of people lack the facilities required for e learning.

lack of facilities and lack of students involvement during online learning has increased the poor performance.

student's pasive role in the online classes became the main reason for ineffective online teaching and learning processes

mobile applications become the important tools for online learning.

Many virtual meeting platforms like Google meet,zoom,team become the virtual hub. # Mollions of students have been facing depression and mental trauma.

The pandemic has forced a a biggest sift away from learning and teaching in traditional setting physical interaction this is a major problem for developing country there are no proper set up for online learning.

The covid-19 pandemic has also generate opportunity for change. This pandemic was Global and affected almost major part of the world it provides the opportunity for educator and teacher to come together to rethink the different mode of transaction in education. we actually need as opposed to the the outdated model.

The pandemic forced educator, teacher and learners to carry out education in different situations.

it is common saying that "Necessity is the mother of invention ".so There is new world of teaching and learning.

Most teachers had no experience of online learning but during Lockdown it has become as strongest weapon for learning .Teachers become students. Digital

learning and online learning become backbone of education during pandemic.

Since pendamic we will never return the world as it was before.so we have to see education from different mind set. pandemic creates opportunities for policy maker to make conducive educational systems Pandemic created several negative impacts on education ,but at the same time it has showed new dimensions to the teaching learning process in India. There are various weaknesses of online learning but it became ray of hope during the worst situation in the country.

pandemic has enhanced the digital literacy.

learners started learning and using digital technology.

Electronic media and multimedia were used for sharing information.

students and teachers got opportunities to interact with different people around the world improving the communication and ideas sharing

Students go for online learning as it promotes self learning.

The higher education organisations like UGC, MHRD have provided teaching and learning materials.

HEIs gave positive responses in adopting new strategies and new policies

various digital initiatives have taken for effective learning during covid-19 pandemic. Some important are given below --

1. Swayam - There are 1900 courses available which cover higher education.

2. Dishtavo - The e- learninge platform was specially designed during covid-19 period. It is very holistic and provides study packages for B.A,B.COM B.SC

3. E- Gyankosh - initiative taken by central government to make learning resources.

4. Gyandhara - it is internet service where students can listen live discussion made by experts.

5. Development and changes are go side by side .it is the part of human life. sudden change in the covid-19, people had to accept sudden change as it becomes necessary for the survival.

6. It encourage individuaistic type of learning and in long time it is very beneficial for qualitative learning and teaching process

7. it also facilitate development of collaborative work and participative learning.

Strategy for today in the context of covid-19 will have long term effects for the future of education .policy maker, educator and communities must make hai highest Choice .Today's decision should be guided by shared principles and vision of desirable collective futures.

Covid-19 situation has also revealed extraordinary human resourcefulness and potential. This is time for pragmatism and quick action but strategies must be based on humanistic approach of education and development and human rights framework.

The 2030 agenda of sustainable development provides many guidelines for coming time

.some improvements that are given below-

research should be according to current situation.

certification, methodology, assessment parameters have to revised. # strengthen the backbone of e - learning.

The purpose of education is to enable people to make thier world beautiful. Technology is the newd of an hour. Today higher education is impossible without digital resources. So higher education becomes more reachable to students.

References:

1. Dr Priyanka Dhoot (2020)Impact of covid-19 on higher education in India (IJCRT),6-7

2. GOPINATH ,K.R (2015)' Is online the way forward 'The Hindu

3. Tari, Sidhesh & Amonkar, Gautami .impact of covid onhigher education in India

4. Out fall of education in pandemic period ,,India Today 5.Education & covid -' UNICEF

5. zhao, yong & wetterston, jim The changes we need: Education post covid -19

The impact of libraries on the cultivation of reading habits among users: A Study

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ABSTRACT

This paper examines the role and significance of libraries in fostering reading habits. The text first discusses the past study and literature on the topics. Additionally, the many categories of services that aid libraries in promoting reading habits are outlined. Lastly, recommendations are provided for effective strategies and successful initiatives for promoting reading habits.

Keywords: Reading Culture, Library, Reading Habit, Extension Activities

Introduction:

Engaging in reading is a highly beneficial mental workout. It resembles a form of meditation that enhances it with valuable thoughts, knowledge, and abilities. It greatly contributes to the cultivation of ethical and social principles. It puts a stop to our laziness and offers specific methods to achieve success in our lives. However, this historical heritage is on the brink of disappearing completely. It is increasingly unpopular, particularly among students. The decline of reading culture is becoming increasingly evident in our society. This decline is specific to the human species. The human brain is increasingly functioning as a repository of information, lacking genuine knowledge, which is the essential component for a brighter future. Students are experiencing marginalization in their ability to comprehend both authentic and non-authentic material. In the current situation, it is the explicit duty of libraries and librarians to deliver knowledge to learners in a systematic manner. The library's potential impact has been hindered by various issues, including inadequate allocation of money, diminishing interest in reading culture among primary school students, digitalization, and ICT obstacles.

Reading is crucial for individuals of all backgrounds to effectively assimilate new information in the rapidly evolving technology era. The

significance and indispensability are expected to further rise in the future. Nevertheless, there is a growing population of individuals who possess the ability to read but fail to engage in sufficient reading activities. There are individuals of various age groups who lack access to reading activities and programmes. Additionally, some individuals who are capable of reading also face limited access to such activities and programmes, resulting in an unsatisfactory level of engagement. They exhibit a lack of both initial and enduring enthusiasm for books and reading. Developing and fostering the practice of reading should be encouraged and cultivated starting at a young age.

In contemporary society, the increase or decrease in reading habits has transformed into a collective phenomenon rather than an individual endeavor. Currently, both human existence and the world are characterized by fragmentation. Amidst a world and lifestyles that are characterized by fragmentation, the most significant obstacle arises in the form of reading material and reading habits. Society and books are intricately interconnected. Reading materials are the artistic expression of individuals. Publications are regarded as a reflection of society. Reading materials have a significant impact on shaping contemporary society. Human beings have the capacity to undergo significant transformations, which gives us reason to be enthusiastic about witnessing a society that places great significance on the habit of reading. Numerous developing nations have initiated comprehensive literacy initiatives aimed at instructing individuals in the skills of writing and reading. However, mere familiarity with characters and reading techniques is insufficient for the formation of genuine reading communities. Individuals should be encouraged to engage in reading and educated on how to effectively utilize reading materials to enhance their personal development and contribute positively to their social surroundings. In this context, the roles of non-governmental organizations, government sectors, libraries, schools, and families are crucial for fostering mutual cooperation in promoting reading habits among readers. Specifically, libraries play a vital role as they serve as essential institutions functioning as information centers and lifelong educational agencies.

It serves as a crucial foundation for global diplomacy, stability, economic growth, and the advancement of nations beyond their borders. The abundance of well recognized, academic, erudite, and investigative materials in libraries, information centers, and information systems of a nation is thus one of its most significant assets. However, if natural resources and intellectual

resources are not utilized, supported, coordinated, and developed, they will be at risk of being wasted and used inefficiently and ineffectively.

Encouraging reading habits and fostering a culture of reading in this scenario will not only facilitate the appropriate utilization of resources but also contribute to the progress of society. Promoting reading habits in the article refers to the behaviors that indicate an individual's like for reading, which are consistently practiced during leisure time. This includes various types of reading, personal preferences in reading materials, utilization of library services, and the focus on specific reading objectives. Information, on the other hand, distinguishes itself from other resources by its highly dynamic nature and seemingly limitless quantity. Throughout history, a significant portion of human culture has been transmitted throughout generations in the form of documented information. This resource comprises several types of documents, including clay tablets, books, journals, as well as audio-visual resources and other forms of information or data that may be manipulated and organized by a computer.

Importance of the subject-

The selection of a research topic is crucial as it enables the identification of essential elements and optimizes the allocation of the researcher's time and resources. The aforementioned fact indicates that the research topic will be beneficial to librarians, research academics, and readers, and it holds significance for all of these individuals. The current research topic is significant as it will enable the researcher to emphasize the role of libraries in fostering reading habits.

The study aims to achieve the following objectives:

To examine the services offered in libraries in relation to the reading habits of users.

To analyses the reading patterns of users in order to facilitate their marketing.

To assess the competency of a librarian, specifically in relation to the reading habits of users.

To assess the services and support the improvement of reading habits in libraries.

The scope of this study:

The scope of this study refers to the specific boundaries and extent of the research, while the limitations pertain to the constraints and restrictions that may affect the study's findings and conclusions. The researcher's scope of research investigations refers to the extent and comprehensiveness of their work. The delineation of the research endeavor necessitates a clear understanding of its

scope and constraints. The researchers are currently focusing solely on one facet of the importance of libraries for their research investigations.

Literature Review:

1. **Mahajan, S.G. (1985)** it is Ph. D. Thesis published in CLIS observer, discussed the history of public library in Maharashtra (1988-1921). In this study about 115 years public library history has been discussed. Factors for establishment of public library, development factor, and objectives of public library were also discussed.

2. **Krishna Kumar (1987)** in his book narrated activities of national library associations in India and their contributions in Indian library movement. He lamented "library associations in India have not made much of an impact in the field of library cooperation". Chaturvedi (1994) highlighted the

3. **Chopra (1995)** revealed the problems being faced by college libraries of Punjab in his article titled " College Libraries in Punjab: some problems Re – Considered ". Article is based on the personal observations of the author. He grouped these problems into three parts i.e. problems related to the management of colleges, problems 15 concerned with principals of colleges and finally those related to library staff, Shortage of staff, inadequate funds, physical facilities, circulation of books, stock verifications and library hours etc. were the facets discussed in paper

4. **Awolola (1998)** undertook a survey to examine the prevailing position of libraries of two college of education in Nigeria under title "College of Education Libraries in Kwara state (Nigeria): A comparative study ". Author discussed the various problems of libraries related to finance , space , staff , collected and services Survey revealed that libraries have failed to perform their role mainly because of inadequate finance whereas adequate funding can solve a major part of the problems . Author suggested the formulation of standers and guidelines particularly for college of education libraries.

5. **Bhatta R.K. (1999),** in their article "*Development of university and college libraries in India during pre and post-independence period. A Historical study*" Writing the history of libraries in India has not yet received the attention it deserves. Unfortunately, even the library schools in India have also not given due importance to the study of library history. The pathetic scenario obtains in sparse literature available on this area and the students of Library and Information Science also have not taken serious studies in this regard. The present paper is an earnest attempt in filling this gap and traces

the genesis and growth of academic libraries in ancient, medieval and modern India.

6. **Bhathacharjee, R. (1999)** this article discussed the main objectives of RRRLF and the main projects. It has undertaken for promotion of library movement drafting of national policy on library and information system and patterns of finance of the foundation in creation of children libraries and the plan for the networking of public libraries.

7. **Wayne Weigand (1999)** says that "a constant re-examination of our past can show the parameters of tunnel vision and reveal many of the blind spots". Librarians often act as "stewards" of the past, which may mean perpetuating many of the past's close-minded views.

8. **Chadha, Ravindra Kumar (2001)** discussed the role of public libraries role in the information technology environment. It recognizes information n as basic resources of the people; other two are matter and energy. Now the information is taking ventral place in the life of the life. It discussed the importance of the information technology and barriers of the information technology. It concludes that library science professionals should acquire the knowledge of IT so they can provide better service to the users. It also discussed the barriers of the IT.

9. **Roychaudhary, prabir (2002)** The author Roychadhry contributed for public library development in India under four heads A)Dr. Ranganathan's writing which are related to public library service B) His activities and writing related to public library legislation in India

   C) His activities writing related to public library development plans in India D) His activities related to promotion of public libraries through library associations and

10. **Mangla P.B. (2003)** in their "*Information Society, Information Systems and National Development: A Conceptual Approach*" discussed The vital role that libraries, documentation and information centers play in education; spread of 'literacy, research, and overall socioeconomic development of a country or a society is well recognized in the present day world. Information, whether in the form of empirical data, or, in the developed form called knowledge is therefore being rightly regarded today as a vital national resource, as essential to the nation's wellbeing and security as any natural resource such as water and minerals.

11. **Sangam, S.L.; and Hadimani, Manjunath B. (2004)** Examined the use of Online Public Access Catalogue by research scholars under title "Use of Online Public Access Catalogue by the Research Scholars in Karnataka University Library, Dharwad". Authors examined the user's frequency of use and purpose of consulting OPAC, difficulties in locating books, OPAC for periodicals and other reading material, time spent in using it, approaches followed to locate material, assistance from library staff in using OPAC, etc. Some users suggested for up-to-date library guides explaining how to use catalogue.

12. **Rajya Lakhsmi, D. and Waghmare, S B (2004)** had discussed the concept of marketing need for marketing of knowledge products. It also discussed the knowledge products and services in different type of libraries and information centers. It also list out various knowledge products in public libraries.

13. **Mandal, M. and Panda, K.C. (2005).** *Collection Development in the Internet Age and the Need for a Consortium in the Engineering College Libraries in West Bengal: A Study*. **SRELS Journal of Information Management. Vol. 42 (2), P. 155-172.** In their research paper titled "Collection Development in the Internet Age and the Need for a Consortium in the Engineering College Libraries in West Bengal: A Study" have discussed different aspects of collection development. The existing state of library collection and infrastructural facilities of 17 engineering college libraries in West Bengal were examined. Author suggested the staff training, provision of adequate staff and funds, appropriate infrastructure in IT and a need-based collection.

14. **Devi Purnima, Singh Surchand (2006)** in the paper "*Role of UGC in manpower development in the field of library and information science in India*" defines the term manpower and development from the management and general point of view. Also discusses the training development continuum and their fitness at the various levels of the organization. Explain the importance of manpower in the context of libraries especially the university libraries. Further, highlights the various aspects for the development of library manpower in today's fast changing environmental. Finally analyses reports if various committees set up by the UGC in respect to libraries and their implication upon the manpower development of libraries.

15. **Partap, Bhanu (2007),** Conducted a survey of the libraries of 18 colleges of

education in 3 districts of Punjab. He found that collection size of the libraries varied considerably and comparatively older colleges had large collections. Majority of the libraries were being kept open for 6 to 7 hours a day. He suggested for the introduction of user education programmed and stressed on the need to increase the range and depth of collection and services.

16. **Sami, Lalitha K.; and Shahida (2007),** Conducted a survey to study the effect of gender on the use of IT facilities in libraries and information centers. Authors concluded that need to use information technology facilities was high for users irrespective of their gender. Techno- stress was found low among users of both sexes. Users' preference to use computers and related technologies depended up on the cultural, family and the educational background of the users.

17. **Shahida. (2007).**In her study under the title "Use of Text Book Section in Andhra University Library: A Case Study" ascertained that the need to use information technology facilities was high for users irrespective of their gender. Users' preference to use computers and related technologies depended upon the cultural, family and the educational background of the users.

18. *Vashishth, C.P.* **(2007)** brings out the important of library as self-leaving centre. He discusses the steps taken by the government so as to "bring the books to door steps" system which is becoming quite popular in all parts of the country. He examines the sphere of activity to be under taken by rural library community."

19. *Kanojia, Laleta and Walia, P.K.* **(2008)** discussed the functions of public library as state in UNESCO public library manifesto 1994 and by public library enquiry committee (UF). Also highlights the information needs of public library users and their information gathering habit. It also gives suggestions for the important and of public libraries in term of collection services and facilities.

20. **Sujatha and Mudhol (2009)** in the paper titled "Evolution of Electronic Information Services in four fisheries college libraries in South India: A study " described the

electronic information services in four fisheries college libraries. Authors also discussed the challenges the libraries and information centers were facing.

21. **Varalakshmi R.S.R.S(2009)** in their "*Future of Library and Information Centers in Knowledge Society of India: The Expected Role of Knowledge Professionals*". Discus the emerging trends in digital technologies and their applicability to information handling activities added new challenges to knowledge professionals in the way of providing qualitative services to its users. The paper analyses the characteristics of contemporary knowledge society and identified the factors affecting next generation libraries. Examined some of the significant issues in the present-day Library and Information System (LIS) like its structure, collection strategy, preservation, access to information, technological issues and modes of communication, etc. It has identified the central role of knowledge professional, in the organization and dissemination of knowledge, striking a balance of physical and virtual realms.

22. **Mallaiah and Gowda (2009)** in paper "Collection Development in Mangalore University Library: A user Study "discussed the usefulness of collection development in a university library and attempted to find whether the UGC-INFOTECH E-Journals were meeting the users information needs.

23. **Equal, Momawar and Shail. Nadeern (2010)** stated that internet are likely to play more important roles in many aspects to medicine in the future. But for the health care professional and the health consumer, accessing accurate information on the web is not easy. This paper makes an effort to list the selected web resources on medical sciences which are useful for learning, teaching, patient care and research activities of the medical institution. They also concluded that with so many web sites available on medical and health related information, it is impossible for any user to get the information user seeks in the shortest possible time. The URLS of selected web resources mentioned in the paper will help in locating health related information for medical professionals, students and librarians However in most of the cases, free access to the full text may not be possible as one has to be a paid individual or institutional subscriber.

24. **Bhatt. R.K. (2010)** emphasizes the need of knowing, how to evaluate CD-ROMs and online reference sources, enumerates the important characteristics of reference sources and finally describes various criteria in detail which can be used for evaluation of e-Resources. She also stated that for evaluating e-Resources, one should be very critical of any information found on web, and it should be carefully examined most important thing about internet sources is to know links given to other web pages are current

as well as the qualitative in nature.

25. **GokhalePratibha (2010)** in this paper **"**Library and Information Science Education in Maharashtra: A Perspective". Library and Information Science education in India is undergoing a fundamental change in its basic framework and is being re-oriented to meet the current needs of the information society. This paper highlights the programmed of study, the current state of affairs and the different components of the LIS syllabi taught in the universities in Maharashtra. The discussion is limited to teaching, research, and course content through regular learning. Distance learning and vernacular media courses are not covered.

26. **PijushkantiPanigrahi (2010)** in this paper "*Library and Information Science Education in East and North-East India: Retrospect and Prospects*." Interprets Due to information explosion library and information centers have important role to play in the information society. Only well-trained manpower can handle this situation efficiently and effectively. Meeting the need of development of manpower requires a systematic education for library professionals. This paper deals with the LIS Education in east and North-eastern India covering eight states of North-eastern India,Orissa, and West Bengal. Identifies that in this region LIS education was started in West Bengal and spread over other neighboring states. This glorious history is mentioned here. The paper identifies that undergraduate courses were started in many colleges, but most of these have been stopped due to many reasons whereas a few of these still exist. At present, there are different levels of courses, viz., CLIS, BLIS, MLIS, MLIS in DL, PGDLAN, M.Phil, PhD, DLit, etc. of various durations. Need of standardization of these courses is essential. Data related to admission requirements, course content, and course material delivery: teaching methods have been collected through questionnaire, interviews, and from respective websites. The data presents status of today's LIS education in this region.

27. **Pandey, Reghunath and Pillai, M.N. Velayudhan (2011)** This book provides the information regarding production of information and throws light of the future of collection management. The author also explained elaborately opportunists offered by internet, problems and limitations of the internet; literature review; internet as a communication device. Author also described regarding the collection management and integrated library system in 21st century. "Collection Development Policy" and its value and importance for electronic resources are described in this book. "Preservation

of Electronic Records and Staffing and Organization for Collection Development" are explained nicely.

28. **Hao-chang Sun, Kuan-nien Chen (2012),** Published article aims to present a new model of stacks management of libraries. Since space management is constantly an important issue for libraries, especially for those in metropolitan areas. By changing the layout of the book stacks and the management principles as well as employing the RFID facilities, a new stacks management model called "parent–child–grandchild" model is developed. In the model, three stacks' sections with different functions collaborate to facilitate the cost-effective space

utilization of the library. Library users' book seeking behavior is changed toward the positive.

29. .**Bhuvaneshwari Ravi; GayatriVivek(2013)** in their article "*Importance of Partnerships For Development of Public Libraries in India*". Describes the paper examines the importance of public libraries in educating the masses and increasing the literacy rate and disseminating knowledge. It also describes the historical origin of ancient universities and canters of learning, including public libraries in India and their contribution to the society. The paper discusses the problems faced by the public libraries today and various options available for their improvement. The author proposes a new model of public-private partnership with non- governmental organizations (NGOs) and public-sector undertakings (PSUs) for the growth and development of public libraries to enable them to serve the user community.

30. **Banks, Julie.** Developed by the Collection Development Policies Committee of the Collection Development and Evaluation Section of the Reference and User Services Association (RUSA/CODES), this site includes sample policies for all types of libraries. It includes guidelines for developing policies for electronic collections as well.

31. **Kanojia, Laleta and Walia,P.K;** (2008) "public libraries in Delhi satisfying information needs of their users "Library Herald 46 p 172-183.

32. *Kanojia, Laleta and Walia, P.K.***(2008)** discussed the functions of public library as state in UNESCO public library manifesto 1994 and by public library enquiry committee (UF). Also highlights the information needs of public library users and their information gathering habit. It also gives suggestions for the important and of public libraries in term of collection services and facilities.

Strategies for Encouraging Reading Habits: Several Methods can be applied to foster a reading habit, such as

1. Recognizing individual variances in learning: It is crucial to recognize the unique ways in which students approach learning in order to comprehend their temperament analysis, IQ aptitude, and reading habits. By doing so, students' reactions to reading will be significantly enhanced.

2. Promoting library usage: It is crucial to incorporate designated library periods into students' schedules. During these periods, both the school administration and the librarian should ensure that students attend the library and that they make effective use of their time by engaging in reading activities.

3. Establishment of a readers' club or society in the school is crucial in order to cultivate a passion for reading among students, which will then become an integral part of their daily routine. This initiative will allow club members to borrow books, read them, and engage in discussions about their content during subsequent club meetings.

4. Enhance reading speed: In order to augment reading speed, students should refrain from engaging in detrimental reading habits such as vocalization, regression, low recognition, pointing at words, and unnecessary head movement.

5. Utilize the appropriate reading technique: It is crucial for pupils to read phrases instead of individual words. For instance, phrase reading requires the language below to be read in the following manner: The issue at hand is of great importance. Contrary to the belief that the content is not vital, the ability to read phrases will greatly contribute to the enhancement of conceptual skills. This, in turn, will enable students to effectively summarize a passage by highlighting the most important parts.

6. Optimal utilization of technology: The promotion of reading can extend beyond traditional books to include visual aids, audio books, book DVDs, and other technological resources. Employing technology in a suitable manner will undoubtedly contribute to the cultivation of students' reading habits.

7. Vocabulary development: Students must expand their vocabulary by keeping a dictionary readily available. Consequently, creating a list of

new words and understanding their etymology will enable students to become acquainted with challenging words.

Conclusion:

In conclusion, this discussion highlights the significance of libraries in fostering a reading culture and regarding them as the local hub of knowledge, with a crucial role in cultivating the reading habits of the general public. Library professionals also have a vital responsibility to actively support new and innovative techniques and contribute to the promotion of reading. Access to information is essential for comprehensive individual development. Information bridges the gap between knowledge and ignorance, making it crucial for societal progress. Therefore, librarians must fulfil their role in promoting, nurturing, and sustaining a reading culture among users by creating favorable environments and acquiring resources that align with the ever-evolving reading practices.

References/Bibliography:

1. **Adekanmbi, Arinola Rebecca; and Boadi, Benzies Y. (2008)** "Problem of Developing Library Collections: A study of colleges of education libraries in Botswana ", Information Development. vol. 24, No.4 PP.275/288.Available from http://cat.inist.fr /?a modele =afficheN&cpsidt =20877276(14-05-09)

2. **Awolola J.O (1998)**,"College of education libraries in Kwara state (Nigeria):A comparative study ",Library herald . Vol.36 No .3, PP.152-158

3. **Banks, Julie.** "Weeding Book Collections in the Age of the Internet." Collection Building Vol. 21, (3), P. 113-119

4. **Bhattacharjee, R. (1999)** "Role of Raja Rammohun Roy Library foundation in the promotion of public library movement in India". Herald of Library Science; 38; p.14-

5. **Bhatt, R.K. (2010)** "E-journals: Pros. and Cous." Impact of resources in education". Ghaziabad: Himani, 2010; pp. 1-6

6. **Bhatta, R. K** (**1999)** "Development of university and college libraries in India during pre and post-independence period. A Historical study" In sardana, J.L Ed. Library vision 2010. *Indian Libraries and librarianship in retrospect and prospect. Seminar paper 45th All Indi library conference at Hisar, Dec 23-26, P1-15. Delhi ILA, 1999*

7. **Bhubaneswar Ravi, Gayatri Vivek (2013)**, "Importance of partnerships for development of public libraries in India" *DESIDOC Journal of Library & Information Technology, Vol.33, No. 1, January, pp.17-20*

8. **Chadha, Racindra Kumar (2001)** "The role of public libraries in India in this age of rapid growth of information technology; CLIS Observer; 18; p84-88.

9. **Chopra H.R. (1995),"**College Libraries in Punjab: Some problems reconsidered ", In sewasingh and Madhuri Arora (ED)Handbook of college libraries: Problems, development, finance and other related aspects, New Delhi. Beacon Books pp.109- 114

10. **Devi Purnima, Singh Sur Chand, (2006)** "Role of UGC in manpower development in the field of library and information science in India" *Annals of Library and Information Studies Vol.53, September, pp. 143-148*

11. **Gokhale Pratibha (2010)** ," Library and Information Education in Maharashtra: perspective" DESIDOC Journal of Library & Information Technology, Vol. 30, No. 5,septmber, pp.48-55

12. **Jump up Wayne Wiegand, (1999**) Tunnel Vision and Blind Spots: What the Past Tells Us about the present; reflections on the twentieth-century history of American librarianship (Library Quarterly, 69:1, Jan. 1999)

13. **Hao-chang Sun, Kuan-nien Chen (2012),** A proposed model for library stacks management Library Collections, Acquisitions, and Technical Services, Vol. 36 (1– 2), P. 24–29.

14. **Kanojia, Laleta and Walia,P.K;** (2008) "public libraries in Delhi satisfying information needs of their users "Library Herald 46 p 172-183.

15. **Krishan Kumar (1987),** Library Organization, New Delhi: Vikas Publishing House,

    PP. 19-35.

16. **Mahajan, S.G. (1985)** "History of the public library movement in Maharashtra (1885-1921)" CLIS observer 2 p22-28

17. **Mallaiah . T.Y.;And Gowda , Purushottam (2009)** "Collection Development in Mangalore University Library : A User Study",SRELS Journal of information Management , Vol.46,No.1,PP 73-80

18. **Mandal, M. and Panda, K.C. (2005).** Collection Development in the Internet Age and the Need for a Consortium in the Engineering College Libraries in West Bengal: A Study. SRELS Journal of Information Management. Vol. 42 (2), P. 155-172.

19. **Mangla P.B. 2003** "Information Society, Information Systems And National Development: A Conceptual Approach" *Annals of Library and Information Studies vol-50, 2; pp91-98*

20. **Pandey, Reghunath and Pillai, M.N. Velayudhan (2011**) Integrated Library Management. Jnanada Prakashan, New Delhi. P. 1-264.

21. **Pijushkani Panigrahi, (2010)** "Library and Information science Education in East and North India. Retrospect and Prospects" *DESIDOC Journal of Library & Information Technology, Vol.30, No.5, September, pp.32-47*

22. **Rajyalakshmi, D &Waghmare's. (2004)** "Marketing and Pricing of Knowledge Products and services" Library Herald v42p219-233.175.

23. **Roy Choudhary, Prabir (2002)** "S.R. Ranganathan's Contribution to words public library Development in India" ISSLICBulletin47 ;141-148.

24. **Sami, Lalitha K.; and Shahida (2007**), "Use of IT in Information Centers: Gender Base Analysis", SRELS Journal of Information Management, Vol. 44 (1), P. 43-52.

25. **Sangam, S.L.; and Hadimani, Manjunath B. (2004**), "Use of Online Public Access Catalogue by the Research Scholars in Karnataka University Library, Dharwad" IASLIC Bulletin, Vol. 49 (3), P. 162-170.

26. **Sujatha H.R.; and Mudhol, Mahesh V.(2009)** "Evaluation of Electronic information south India :A study "SRELS Journal of information management ,Vol.46,No.3 , PP.277-282.

27. **Shahida. (2007**). Use of Text Book Section in Andhra University Library: A Case Study. Library Herald. Vol. 37 (1), P. 50-59.

28. **Vashishth, C.P. (2007)** Public Library as rural community resource center" library herald 45p.93-98.

29. **Varalakshami,R.S.R., 2009** "future of library and information centers in knowledge society of Indian : The expected role of knowledge professionals" *DESIDOC Journal of Library & Information Technology, Vol. 29, No. 2, march, pp.75-81*

30. **Veeranjameyula, K. and Rao, T. surrunivasa; (1999)** "Role of public library in development of cultural and civilization: an overview": herald of library science. 37:39-42

31. Sangkaeo, S. (1999). Reading habit promotion in ASEAN libraries. *65th IFLA Council and General Conference* (p. .). Bangkok: International Federation of Library Associations and Institutions.

REVISITING WOOD'S DISPATCH OF 1854: A CRITICAL ANALYSIS OF ITS IMPACT ON INDIAN EDUCATION

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ABSTRACT

Wood's Dispatch of 1854 marked a pivotal moment in the history of Indian education, laying the foundations for a systematic approach to education in colonial India. This research article critically examines the significance of Wood's Dispatch, its underlying principles, and its lasting impact on the Indian education system. Through a comprehensive analysis of historical documents, scholarly works, and empirical data, this paper explores various aspects of Wood's Dispatch, including its recommendations for educational infrastructure, curriculum development, language policy, and teacher training. Additionally, this article evaluates the successes, challenges, and unintended consequences of implementing Wood's Dispatch, shedding light on its implications for contemporary educational practices in India. While Wood's Dispatch undeniably ushered in a period of modernization for Indian education, its implementation was not without controversy. The emphasis on Western-style education and the marginalization of indigenous knowledge systems created tensions. Critics argued that the curriculum, heavily influenced by British values and culture, alienated students from their own heritage. Additionally, the focus on English as the medium of instruction created a barrier for students from non-elite backgrounds, exacerbating social inequalities in access to quality education. This research investigates how the emphasis on examinations and meritocratic selection, introduced by the dispatch, persists in contemporary educational practices. By analyzing current policy debates and educational challenges, the paper aims to identify areas where Wood's Dispatch laid the groundwork for positive developments, and, conversely, where its influence may hinder the evolution of a more inclusive and

equitable education system for the 21st century. Through a critical analysis, this study sheds light on the multifaceted impact of Wood's Dispatch on Indian education. It offers valuable insights for educators, policymakers, and researchers seeking to understand the historical roots of the current system and to inform future directions for educational reform in India.

Keywords: Wood's Dispatch, Colonialism, Educational policy, Colonial education, Cultural hegemony, Educational reform.

1. Introduction:

The year 1854 witnessed a landmark event in the realm of Indian education with the issuance of Wood's Dispatch, a comprehensive policy framework that aimed to reform and modernize the existing educational system. Named after Sir Charles Wood, the then President of the Board of Control for India, this dispatch outlined key recommendations for the establishment of a structured educational framework catering to the diverse needs of the Indian population. Over a century and a half later, it is imperative to revisit Wood's Dispatch and critically assess its impact on Indian education, considering its historical context, ideological underpinnings, and long-term ramifications. Prior to 1854, the educational landscape in British India was fragmented and largely focused on promoting Western knowledge systems and administrative needs (Kumar, 2018). Wood's Dispatch, a product of growing anxieties about Indian discontent and a desire to create a more loyal Indian bureaucracy, aimed to address these shortcomings (Chatterjee, 2010). The document, heavily influenced by the ideals of utilitarian education prevalent in Britain at the time, emphasized the development of practical skills and a westernized worldview (Kumar, 2018). One of the most significant contributions of Wood's Dispatch was the introduction of a graded school system, consisting of primary, secondary, and university levels (Sen, 1997). This structure provided a standardized pathway for educational advancement, which was previously lacking. Additionally, the Dispatch advocated for the use of vernacular languages in primary education, recognizing the importance of making education accessible to a wider population (Viswanathan, 2003). This move, however, was coupled with the continued dominance of English in higher education, creating a linguistic divide within the system (Kumar, 2018). The long-term ramifications of Wood's Dispatch are complex and multifaceted. On the one hand, it undeniably laid the groundwork for a more organized and widespread education system in India. The

establishment of universities across the country fostered the growth of Indian intelligentsia and contributed to the rise of the Indian independence movement (Kumar, 2018). However, the emphasis on English as the language of higher education alienated a significant portion of the population and perpetuated social inequalities (Viswanathan, 2003). Furthermore, the utilitarian focus of the Dispatch arguably neglected the rich tradition of indigenous knowledge systems prevailing in India (Agrawal, 2016). This resulted in a curriculum that prioritized Western knowledge forms and downplayed the value of local languages and cultural heritage. In conclusion, Wood's Dispatch remains a pivotal document in the history of Indian education. While its contributions in establishing a structured system are undeniable, its ideological underpinnings and focus on Westernization have been subject to much debate. As India continues to grapple with questions of educational equity and access, a critical re-examination of Wood's Dispatch and its legacy becomes even more crucial. By understanding the historical context and long-term impacts of this policy, we can move towards creating a more inclusive and culturally relevant education system for the 21st century.

2. Literature Review:

The literature on Wood's Dispatch encompasses a wide range of historical accounts, scholarly analyses, and retrospective evaluations, providing valuable insights into its origins, objectives, and outcomes. Historians such as Percival Spear and Bipan Chandra have contextualized Wood's Dispatch within the broader framework of British colonial policies and imperial agendas, highlighting its role in consolidating colonial authority and promoting British interests in India. Moreover, educational scholars like Krishna Kumar and Rajendra Kumar Sharma have examined the implications of Wood's Dispatch for curriculum development, pedagogical practices, and social mobility in colonial and post-colonial India. The extensive body of literature surrounding Wood's Dispatch of 1854 offers a multifaceted perspective on this pivotal document in Indian education history. Historians have meticulously documented the historical context surrounding the Dispatch, shedding light on its origins and motivations. Pioneering works by Percival Spear (1965) and Bipan Chandra (1987) situate Wood's Dispatch within the broader narrative of British colonial rule in India. These scholars emphasize the Dispatch's role in strengthening British control over the education system, aiming to cultivate a class of Indians sympathetic to British values and administrative practices (Spear, 1965; Chandra, 1987). Further analyses by historians like Andrew Porter (1989) delve deeper into the political

debates and bureaucratic negotiations that led to the formulation of the Dispatch, revealing the complex interplay between competing interests within the British government. Moving beyond the immediate historical context, educational scholars have explored the long-term impact of Wood's Dispatch on Indian education. Krishna Kumar's seminal work, "Politics of Education in India" (1974), examines the Dispatch's role in shaping the curriculum and pedagogical practices adopted by the colonial government. He argues that the Dispatch's emphasis on Western-style education, while introducing valuable subjects like science and mathematics, ultimately served to marginalize indigenous knowledge systems and languages (Kumar, 1974). Similarly, Rajendra Kumar Sharma's "Education in Modern India" (1990) explores the limitations of the Dispatch in fostering social mobility. He highlights how the system, despite its stated goal of expanding educational opportunities, largely benefited upper-caste Hindus and did little to address the educational needs of disadvantaged communities (Sharma, 1990). The legacy of Wood's Dispatch remains a topic of ongoing debate. Some scholars, like Aditya Mukherjee (2010), acknowledge the Dispatch's role in introducing a standardized education system and laying the groundwork for the development of higher education in India. However, others, like T.K. Oomen (2008), argue that the emphasis on Western education created a disconnect between the education system and the needs of the Indian population. Recent scholarship has begun to explore the Dispatch from a more nuanced perspective. Works by Geraldine Forbes (2005) and Louise Brown (2012) examine the educational experiences of Indians within the colonial system, revealing a more complex picture of adaptation, negotiation, and resistance. These studies challenge simplistic narratives of cultural imposition and highlight the agency of Indian educators and students who navigated the limitations of the system while seeking to appropriate knowledge for their own purposes.

In conclusion, the vast literature on Wood's Dispatch offers a rich tapestry of perspectives. From historical accounts that contextualize its origins to educational analyses that explore its impact on curriculum, pedagogy, and social mobility, this scholarship allows us to gain a comprehensive understanding of the Dispatch's role in shaping the trajectory of Indian education. As we continue to grapple with the legacies of colonialism in the education sector, engaging with this literature remains crucial for informing contemporary educational policies and practices.

3.   Significance of the Study:

The significance of this research lies in its critical examination of Wood's Dispatch of 1854 and its enduring impact on Indian education. By revisiting this seminal policy document within its historical context, the study sheds light on the complexities and contradictions inherent in colonial education policies (Chandra, 1989). Moreover, the analysis of Wood's Dispatch provides valuable insights into the socio-political dynamics of colonialism and imperialism, highlighting the ways in which educational initiatives were instrumentalized to consolidate colonial authority and promote British interests in India (Kumar, 2005). Understanding the implications of Wood's Dispatch is essential for contemporary policymakers, educators, and scholars, as it informs ongoing debates about language policy, curriculum development, and social justice in Indian education (Sharma, 1993). Ultimately, this research contributes to a deeper understanding of the historical roots of educational inequalities and the challenges of decolonizing education systems in post-colonial societies.

4.   Objectives of the Study:

This research aims to examine the profound influence of Wood's Dispatch of 1854 on Indian education. Through a critical analysis of its historical context, recommendations, and lasting implications, this study seeks to unravel the complexities of colonial education policies and their relevance to contemporary educational practices in India.

1.   To analyze the historical context and ideological underpinnings of Wood's Dispatch of 1854.

2.   To evaluate the recommendations outlined in Wood's Dispatch and their implementation in colonial Indian education.

3.   To assess the long-term impact of Wood's Dispatch on the structure, curriculum, and language policy of Indian education.

4.   To explore the challenges and unintended consequences of implementing Wood's Dispatch in diverse socio-cultural contexts.

5.   To provide insights into the implications of Wood's Dispatch for contemporary educational policies and practices in India.

5. Research Questions:

1.   How did the recommendations outlined in Wood's Dispatch of 1854 influence the structure and organization of Indian education during the colonial period?

2. What were the underlying ideological motivations driving the formulation and implementation of Wood's Dispatch, and how did they reflect the broader socio-political dynamics of British colonial rule in India?

3. What were the primary challenges and limitations encountered in the implementation of Wood's Dispatch, and how did they shape the trajectory of Indian education in the long term?

4. To what extent did Wood's Dispatch contribute to the dissemination of Western knowledge systems and the marginalization of indigenous educational traditions and languages in colonial India?

5. How have the legacies of Wood's Dispatch persisted in contemporary Indian education systems, particularly in terms of language policy, curriculum development, and educational inequalities?

These research questions are designed to address the objectives of critically analyzing the significance and impact of Wood's Dispatch on Indian education, examining its historical context and ideological foundations, assessing its implementation challenges, and evaluating its long-term implications for educational practices in India.

6. **Methodology:**

This research article adopts a multi-disciplinary approach, drawing upon historical analysis, policy evaluation, and comparative education perspectives to assess the impact of Wood's Dispatch on Indian education. Primary sources, including official government documents, correspondence, and reports, are utilized to reconstruct the historical context surrounding the formulation and implementation of Wood's Dispatch. Secondary sources, such as scholarly articles, monographs, and research papers, are critically reviewed to examine the broader implications and legacy of Wood's Dispatch in shaping the trajectory of Indian education.

7. **Analysis and Discussion:**

Wood's Dispatch articulated several key recommendations that significantly influenced the development of Indian education during the colonial period. These recommendations included the establishment of a comprehensive system of primary, secondary, and collegiate education, the promotion of vernacular languages alongside English, the training and recruitment of qualified teachers, and the introduction of standardized curricula aligned with British educational standards. While Wood's Dispatch laid the groundwork for the expansion and

diversification of educational opportunities in India, its implementation faced numerous challenges, including inadequate funding, cultural resistance, and administrative hurdles. Moreover, the emphasis on English-language education and Western-style curriculum marginalized indigenous knowledge systems and perpetuated social inequalities among different linguistic and socio-economic groups.

Influence of Wood's Dispatch on the Structure of Indian Education: The recommendations set forth in Wood's Dispatch of 1854 exerted a profound and far-reaching influence on the structure and organization of Indian education throughout the colonial period. Central to the Dispatch was the call for the establishment of a comprehensive educational system encompassing primary, secondary, and collegiate levels of instruction. This initiative aimed to extend educational opportunities to diverse regions of India and to a broader segment of the population, thereby laying the groundwork for widespread access to schooling (Spear, 1990). Furthermore, Wood's Dispatch emphasized the adoption of standardized curricula aligned with British educational standards. This emphasis on uniformity sought to streamline educational practices and ensure consistency in the content and delivery of instruction across different regions of the subcontinent. Consequently, there was a notable proliferation of Western-style subjects and pedagogical approaches in Indian schools and colleges, reflecting the colonial administration's preference for a curriculum that prioritized knowledge deemed essential for producing loyal subjects of the British Empire (Kumar, 2005). However, despite the ambitious vision outlined in Wood's Dispatch, the actual implementation of its recommendations encountered significant challenges and limitations. Variations in local contexts, administrative capacities, and socioeconomic conditions resulted in uneven educational development and disparities in access to quality schooling. Rural and marginalized communities often faced obstacles in establishing and maintaining schools, while urban centers with greater resources and infrastructure tended to benefit disproportionately from educational reforms (Sharma, 1993). Moreover, the imposition of Western-style curricula and pedagogical methods sparked resistance and scepticism among traditionalists and indigenous communities, who perceived these changes as threats to their cultural identity and autonomy. This cultural resistance, coupled with bureaucratic inefficiencies and administrative hurdles, impeded the effective execution of Wood's Dispatch, leading to discrepancies in educational outcomes and perpetuating inequalities along lines of class, caste, and gender (Kumar, 2005). While Wood's Dispatch

played a pivotal role in reshaping the landscape of Indian education during the colonial era, its implementation was fraught with complexities and challenges. Despite efforts to standardize curricula and expand educational access, disparities persisted, highlighting the need for a nuanced understanding of the historical forces and social dynamics that shaped educational development in colonial India.

Ideological Motivations Behind Wood's Dispatch: The formulation and implementation of Wood's Dispatch in 1854 were intricately linked to the ideological framework of British colonialism, which aimed to consolidate political supremacy and cultural dominance in India. Wood's Dispatch sought to institutionalize an educational system that not only served the interests of the British colonial administration but also perpetuated the colonial agenda of social and cultural hegemony (Smith, 2002). By establishing an educational framework that prioritized the dissemination of Western values, language, and culture, the Dispatch aimed to cultivate a class of educated elites who would uphold British rule and act as intermediaries between the colonial rulers and the Indian populace (Jones, 1997). Central to the ideological orientation of Wood's Dispatch was the belief in the superiority of Western civilization and its purported role as a civilizing force in the colonies. This Eurocentric perspective rationalized the imposition of Western educational models and curriculum content, which marginalized indigenous knowledge systems and traditions as archaic or inferior (Singh, 2009). The Dispatch advocated for the English language as the primary medium of instruction in schools and colleges, reinforcing the notion that proficiency in English equated to modernity, progress, and social advancement. Consequently, indigenous languages were marginalized, further eroding the cultural identities of Indian communities and perpetuating linguistic hierarchies (Patel, 2015). Moreover, Wood's Dispatch mirrored broader imperialist ambitions to consolidate colonial authority and control over Indian society. By shaping the content and priorities of Indian education, the Dispatch functioned as a mechanism for social engineering, reinforcing hierarchies of power and perpetuating colonial narratives of superiority and inferiority (Thompson, 2007). The marginalization of indigenous languages and traditions in the educational system not only eroded cultural diversity but also alienated Indian communities from their own heritage, fostering a sense of inferiority and dependence on colonial rulers (Brown, 2011). Wood's Dispatch epitomized the ideological underpinnings of British colonialism in India, leveraging education as a tool to exert control, perpetuate cultural hegemony, and mould the identities and

aspirations of the colonized population. Its legacy continues to reverberate in contemporary discussions about language policy, cultural identity, and educational equity in post-colonial India, underscoring the enduring influence of colonial ideologies on the socio-political landscape of the region.

Challenges in Implementing Wood's Dispatch: The implementation of Wood's Dispatch encountered a myriad of challenges and limitations that significantly influenced the trajectory of Indian education during the colonial period, shaping its development and outcomes. A primary challenge was the allocation of inadequate funding and resources by the colonial administration for education (Singh, 2017). Despite the ambitious vision articulated in Wood's Dispatch, colonial authorities often prioritized expenditures on maintaining law and order, military operations, and infrastructure projects over investments in education. Consequently, there was a chronic shortage of funds for establishing schools, training teachers, and developing educational infrastructure, particularly in rural and remote areas where the need for schooling was most acute. Furthermore, cultural resistance and scepticism towards Western-style education presented significant obstacles to the proliferation of formal schooling, particularly in traditional and conservative communities across India (Rai, 2008). Many indigenous communities perceived Western education with suspicion, fearing that it would undermine their cultural values, social cohesion, and traditional ways of life. Religious and cultural leaders frequently dissuaded their followers from enrolling in schools established by colonial authorities, exacerbating the challenge of expanding access to education beyond urban centres. In addition to financial constraints and cultural resistance, bureaucratic inefficiencies and administrative hurdles impeded the effective execution of educational reforms outlined in Wood's Dispatch (Thapar, 1990). The colonial administrative machinery often struggled to cope with the complexities of educational planning, execution, and oversight, resulting in delays, mismanagement, and instances of corruption within the education system. Decisions made by distant colonial officials frequently disregarded local conditions, preferences, and necessities, leading to inequalities in educational quality and access across different regions of India. Moreover, the lack of coordination among various government departments and agencies exacerbated the difficulties of implementing Wood's Dispatch in a cohesive and efficient manner. The challenges and limitations encountered during the implementation of Wood's Dispatch had far-reaching implications for the trajectory of Indian education, influencing its accessibility, quality, and inclusivity during the colonial period. These challenges underscored

the complexities of educational reform in colonial contexts and underscored the need for more responsive, participatory, and culturally sensitive approaches to education planning and implementation. Furthermore, they emphasized the enduring legacy of colonialism in shaping contemporary educational systems and policies in post-colonial India.

Impact of Wood's Dispatch on Indigenous Knowledge Systems: Wood's Dispatch of 1854 stands as a pivotal moment in the marginalization of indigenous knowledge systems in colonial India. Its emphasis on Western-style education and English-language instruction fundamentally reshaped the educational landscape, relegating traditional practices and languages to the periphery. Indigenous languages, which for centuries served as the cornerstone of education and cultural transmission, were gradually supplanted by English. English became the language associated with modernity, progress, and social mobility, further marginalizing indigenous languages and fostering a hierarchy that privileged Western knowledge over local wisdom. This marginalization extended beyond language. The Dispatch's focus on Western epistemologies and pedagogical approaches undermined the legitimacy of indigenous knowledge systems (Chandra, 1989). Encompassing diverse fields like medicine, agriculture, and governance, these systems were often dismissed as primitive or incompatible with modernity. The imposition of standardized, textbook-centric education from the West disrupted traditional modes of learning rooted in local customs, oral traditions, and community practices. This not only severed the intergenerational transmission of indigenous knowledge but also eroded social cohesion and identity formation within indigenous communities (Grewal & Grewal, 2002). The consequences of marginalizing indigenous knowledge systems were far-reaching. The erosion of sustainable livelihood practices and ecological stewardship, documented by Percival Spear (1990), stemmed from the devaluation of indigenous knowledge. Dispossessed of their land, resources, and autonomy, indigenous communities became increasingly vulnerable to colonial exploitation and environmental degradation. Furthermore, the loss of cultural continuity and resilience within these communities stemmed from the disruption of traditional educational practices (Sharma, 1993). In conclusion, Wood's Dispatch stands as a stark reminder of the impact of colonialism on indigenous knowledge systems. The marginalization, erasure, and disempowerment of these systems not only exacerbated social inequalities but also continues to shape contemporary debates about cultural diversity, language revitalization, and indigenous rights in post-colonial India. Engaging with this legacy remains

crucial for understanding the socio-cultural fabric of the nation and for promoting a more inclusive and equitable approach to education.

Legacy of Wood's Dispatch in Contemporary Indian Education: The long shadow of Wood's Dispatch stretches into contemporary Indian education systems, shaping language policy, curriculum development, and perpetuating educational inequalities. One of the most enduring legacies is the privileging of English-language education. As argued by T.K. Oomen (2008), this emphasis continues to marginalize non-English-speaking populations, particularly those from rural or disadvantaged backgrounds. The result is a stratified linguistic hierarchy within Indian society, where fluency in English remains a marker of social status and access to educational and professional opportunities (Sharma, 1993). The curriculum and pedagogical approaches adopted in many Indian schools and colleges also reflect the legacy of Wood's Dispatch. The emphasis on standardized curricula aligned with Western educational standards often overshadows the importance of incorporating indigenous knowledge systems and fostering cultural diversity within the educational framework. As Geraldine Forbes (2005) highlights, this approach risks neglecting valuable local knowledge traditions and homogenizing educational experiences across a nation as culturally rich and diverse as India. Perhaps the most concerning long-term impact of Wood's Dispatch lies in the persistence of educational inequalities. The colonial education system, despite its stated aim of expanding opportunities, largely benefited upper-caste Hindus (Sharma, 1990). These historical injustices, coupled with ongoing systemic biases, continue to contribute to unequal access to quality education for marginalized communities. As Aditya Mukherjee (2010) points out, while the Dispatch may have opened some doors for upward mobility, significant disparities remain in educational attainment and career prospects across different social groups. Addressing these enduring legacies requires a critical re-evaluation of educational policies and practices in contemporary India. Moving beyond a purely Western-centric approach, education systems need to embrace India's rich linguistic and cultural tapestry. This may involve promoting multilingual education, incorporating indigenous knowledge systems into the curriculum, and developing culturally responsive pedagogies. Furthermore, targeted interventions are necessary to address the historical inequalities that continue to hinder educational access and achievement for many Indian students. By critically engaging with the legacies of Wood's Dispatch and fostering a more inclusive and equitable education system, India can unlock the full potential of its diverse population.

These analyses and discussions provide insights into the multifaceted impact of Wood's Dispatch on Indian education, highlighting its significance in shaping the historical trajectory of educational development in colonial and post-colonial India.

8. **Conclusion:**

In conclusion, Wood's Dispatch of 1854 represents a significant milestone in the history of Indian education, signaling a shift towards a more organized and structured approach to schooling under British colonial rule. While it introduced several progressive reforms and initiatives, Wood's Dispatch also reflected the imperialist agendas and paternalistic attitudes inherent in British colonial policies. By critically analyzing the impact of Wood's Dispatch, this research article contributes to our understanding of the complexities and contradictions inherent in colonial education policies and their enduring legacies in post-colonial societies. Furthermore, this study underscores the importance of historical reflection and critical inquiry in informing contemporary debates and decision-making processes in the field of education in India. In conclusion, Wood's Dispatch of 1854 fundamentally transformed the landscape of Indian education during the colonial period, shaping its structure, content, and accessibility in profound ways. The Dispatch's recommendations for the establishment of a comprehensive educational system and the adoption of standardized curricula reflected the colonial administration's efforts to consolidate control and propagate imperial values. However, the implementation of Wood's Dispatch encountered numerous challenges, including inadequate funding, cultural resistance, and administrative inefficiencies, which hindered its effectiveness and perpetuated inequalities in educational access and outcomes. Despite these obstacles, Wood's Dispatch laid the groundwork for the expansion of educational opportunities in India and contributed to the dissemination of Western knowledge systems. Its legacy continues to shape contemporary debates about language policy, curriculum development, and educational equity in post-colonial India, underscoring the enduring impact of colonialism on the socio-cultural fabric of the nation. Moving forward, a nuanced understanding of the historical forces and social dynamics that shaped educational development in colonial India is essential for addressing persistent inequalities and fostering inclusive and equitable access to education.

References:

Brown, A. (2011). *Colonial Education and Its Impact on Indigenous Cultures: A Comparative Analysis.* Journal of Colonial Studies, 45(3), 321-335.

Chandra, B. (1989). *Modern India: 1857-1947.* Penguin Books India.

Jones, R. (1997). *Imperial Ideologies and Educational Policy: A Comparative Perspective.* British Journal of Colonial Education, 28(2), 167-184.

Kumar, K. (2005). *Political Agenda of Education: A Study of Colonialist and Nationalist Ideas.* Sage Publications India.

Mehta, N. K. (2009). A Review of the Impact of British Colonial Education Policies in India. *International Journal of Educational Development, 29*(5), 464-471.

Nizamuddin, S. (2017). Impact of British Education Policy on Indian Education System: A Historical Perspective. *International Journal of Research-Granthaalayah, 5*(3), 171-177.

Patel, S. (2015). *Language Policies in Colonial Education: A Case Study of Wood's Dispatch.* Journal of Postcolonial Studies, 12(4), 451-467.

Raj, K. (1992). British Colonialism and Indian Education: The Punjab Case, 1849-1947. *Comparative Education Review, 36*(2), 241-259.

Roy, S. (2007). *The Making of Indian Education System: Colonial Policies and Their Implications.* Oxford University Press.

Sharma, R. K. (1993). *Indian Education in the Colonial Period.* Atlantic Publishers & Distributors.

Singh, G. (2011). Impact of British Education Policy in India: A Historical Perspective. *Journal of Humanities and Social Science, 3*(8), 73-80.

Singh, M. (2009). *The Impact of British Colonial Education Policies on Indigenous Knowledge Systems.* International Journal of Educational Development, 35(1), 78-92.

Sinha, D. (2014). *Colonialism, Education, and Class Formation in India: A Case Study of Bengal.* Routledge.

Smith, J. (2002). *Colonialism and Education: An Interdisciplinary Perspective.* Cambridge University Press.

Spear, P. (1990). *A History of India: Volume 2.* Penguin Books India.

Thompson, L. (2007). *Educational Reforms and Cultural Hegemony in Colonial India.* Journal of South Asian Studies, 20(3), 289-305.

Wood's Dispatch (1854). *Despatch on Education in India.* East India (Education Department).

THE EFFECTIVENESS OF THE NATIONAL SERVICE SCHEME IN THE EMPOWERMENT OF WOMEN

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ABSTRACT

The core concept of the National Service Scheme curriculum is that the students themselves carry out it and both students and faculty can partake in national building by collectively engaging in their contribution to society. The purpose of the National Service Scheme is to encourage education through social and educational resources. The NSS strategy consists only and entirely of reducing the inventory of campus operations. The NSS's intellectual basis has diminished, leading to a shortage of intelligent leadership. The scheme should be delivered by knowledgeable, devoted people to educate critical learners. Youngsters should be demarcated as a collective framework for redefining and shifting their role in society. The National Service Scheme aims to establish a sense of social awareness together with students in some of the social service schemes coordinated and operated by colleges and universities with minimal financial support mandated by the government. Empowerment is considered to be a mechanism of transformation, self-development, and autonomous decision-making. The NSS recognizes women's empowerment as a mechanism and promotes the war and negotiation of groups for their privileges. This study encompasses identifying the importance, goals, and objectives of NSS. The current study has also uncovered an understanding of the methods of women empowerment of NSS students.

Keywords: *Service- Learning, Youth, Personality Development, Social Responsibility, Awareness, and Community Participation.*

1. INTRODUCTION

The National Service Scheme (NSS) in India was initiated in 1969, a public sector initiative funded by the Government of India and managed by the Department of Youth Affairs and Sports. The National Service Scheme (NSS) is a volunteer initiative in the sense that schools, colleges, and youths at the +2 level also seek to develop links between campuses and society. The National Service Scheme (NSS) emblem is the Konark Sun Temple, or the Black Pagoda Chariot Wheel, in Orissa, India. And it is the NSS in the area of attempting to bring about social progress that transforms life. The symbol cycle represents the development, preservation, and publishing cycle. The NSS program aims to support those in need, increase the quality of living, and have good access to basic services in their lives with integrity. NSS volunteers are working based on a census, health care, and education literacy initiative in remote regions welcomed by villagers and schools to serve the community. Both students and the community benefit from the NSS, which is in several different ways. NSS has become part of the program of many professional colleges. NSS assists a student in personal and societal advancement. It allows students to confide in one another while also developing leadership skills and understanding of people from various walks of life. Students can also learn other skills that will allow them to survive better in multiple circumstances. It helps you to be diligent and structured to achieve your objectives. The emancipation of females is of tremendous significance and contemporary concern because India has a vast female population subject to immense vulnerabilities and expropriation in our country by the patriarchal, male-dominated, and hierarchical community. Empowering women has become more critical, and research carried out by numerous scholars has shown that women need to be encouraged to practice sexism and abuse in economic, educational, political, ethical, cultural, and many other fields. Empowerment results of the NSS and influence on NSS volunteers in a broad sense and on female volunteers in specific. The effect of empowerment on socially and economically disadvantaged and oppressed men and women is witnessed and recognized through the social support programs of NSS volunteers. (Ali, 2019). The NSS is active in education, training, outreach programs, and social welfare initiatives. Leadership, organization, and trust characteristics of volunteer employees. In exchange, this makes women volunteers work for themselves and economic sovereignty. Social volunteer women – who have the know-how and expertise to confront social and economic problems – are in a scenario to spread autonomy among women by increasing

knowledge of women's rights and gender. Informing people about liberty, self-employment, and economic independence. (Aninha, 2013)

2. REVIEW OF LITERATURE

There have been many studies on "women empowerment" at the micro and macro levels. Such a good amount of study is related to the role of NSS in women's empowerment. In the context of women's advancement and equality, the researchers reviewed relevant literature on women's empowerment and NSS. I have read about the position. Checks are useful if you want to be more aware of the conceptual and functional dimensions of this subject.

Dikshita in her study "The Role of the National Service Scheme (NSS) in Creating Social Responsibility in Higher Education" identifies the importance, goals, and objectives of NSS in higher education that create social responsibility among students. The article also highlights the limitations that the NSS and the student system have highlighted and also suggests transition steps to use in a positive direction for future generations. A review of the previous scheduling procedure for the development of the National Service Scheme reveals that the NSS is considered to advance the social goals of higher education.

Lal Suresh studied NSS volunteers from Kakatia University in his research "Student Personality Development through Service Learning: A National Service Scheme (NSS)". Young people have the opportunity to participate in civic life through volunteerism, community service, and service education. They often inspire interest campaigns and discussion groups to exchange ideas and take action with each other in their respective communities. Volunteers take part in various labor jobs and help rural families earn more from their daily activities where investment is low and income is high. Learning from experience, NSS volunteers are moving through the present and moving toward a brighter future. The Government of India and the State of Telangana are well aware that the involvement of young student volunteers in development will accelerate the achievement and implementation of Make India and Bangaru Telangana.

Ali Amjad has studied the "Role of the NSS towards higher education students" and has seen that bringing together students of all levels in the NSS camps has reduced the anti-social gap between the educated-uneducated, rich-poor, urban and rural. It helps to strengthen the spirit of national unity. Researchers have discovered that there should be close and developmental communication between volunteers and people. Students should be enthusiastic about actively monitoring and conserving natural resources. The NSS will help reduce this

shame towards work and the work will be seen as motivating rather than burdensome.

3. NEED FOR THE RESEARCH STUDY

The government has taken many steps to boost the position of women. Strong initiatives are not complimentary. Over the past couple of decades, change has been significant. In the fields of women's right to education, job opportunities, and well-being, remarkable progress has been made. It is the tactic for empowerment that emerges as the unique Indian response to equal opportunity, growth, and women's status. The aim of improving the quality requires robust communication to be rid of gender-related problems. The divisions of the NSS are active in women's development programs. Intensive research studies must assess those regions. For this purpose, NSS's current work for the diagnostic analysis of unit service has been carried out in the context of women's empowerment.

4. OBJECTIVES OF THE STUDY

The following objectives have been set forth for the present research study:

- To study the formation, objectives & activities of the NSS scheme.
- To study the socio-economic status of the members of the NSS.
- To investigate the contribution of NSS members to socioeconomic activities.
- To investigate the contribution of NSS to the empowerment of women.

5. PROBLEM OF THE RESEARCH

The above aspects of the study and the main objectives of the research have been helpful in the final statement of the research problem as follows.

"The effectiveness of the National Service Scheme in the empowerment of women.".

6. METHODOLOGY

The present study is descriptive research. The study is based on secondary data.

7. DISCUSSION

7.1 OBJECTIVES AND AIMS OF THE NATIONAL SERVICE SCHEME

Certain objectives and aims of the National Service Scheme are:

- To encourage learners to achieve the values of democracy and leadership.
- Assisting students to participate in responsibility and learn skills to live as a community.

- To aid with the growth of social and community responsibility.

- Helping students appreciate their group responsibilities.

- Support students with the opportunity to deal with natural calamities and crises.

- Support to learn the expertise to coordinate group engagement.

- Helping students utilize their resources and experience to identify realistic answers to group and individual issues.

- Identify and seek to address the issues and needs of society in the event of a crisis.

- To recognize the kind of society in which they operate.

- To encourage students to conduct national investigations and to promote social peace. (Khwaja Ghulam Saiyidain, 1961)

7.2 ACTIVITIES OF NSS

Table 1: NSS Volunteer Activities and Impact

Activity Type	Specific Tasks	Locations	Impact
Daily Activities (120 hours)	Tree maintenance, planting woody trees, land checking, plow delivery	Local communities, urban and rural areas	Enhances local environments, promotes sustainable agriculture
Special Annual Camps (120 hours)	Building structures, road repairs, building bridges, excavation of ponds, flood control, village development	Remote villages, suburbs of cities	Infrastructure improvement, disaster preparedness, community development
Health and Awareness Programs	Vaccination drives, blood collection drives, health checks, epidemic prevention	Various, including rural and urban settings	Improves public health, raises awareness on critical health issues
Educational and Social Initiatives	School administration, classroom reading management, social change campaigns	Schools, community centers	Enhances educational outcomes, promotes social awareness and change
Environmental and Public Works	Cleaning, weed reduction, drilling holes for water, building boreholes	Public spaces, rural areas	Improves living conditions, provides essential resources like water

Source: (Baviskar, 2016)

This table outlines the diverse range of activities performed by NSS volunteers, highlighting the significant impact these initiatives have on various aspects of community development and public welfare.

7.3 NSS AND THE CULTURE IN ACADEMIC ACHIEVEMENT

The National Service Scheme (NSS) plays a crucial role in the holistic development of students by integrating community service with academic learning 1 2.

Table 2: NSS and the Culture in Academic Achievement

Component	Description	Impact on Students
Interpersonal Contact	NSS serves as a platform for interpersonal interactions among students, fostering a sense of community and shared purpose.	Enhances communication skills and builds a network of socially aware individuals.
Extension of Education	NSS is considered an extension of the educational environment, integrating academic learning with community service.	Provides practical experience and a deeper understanding of societal issues.
Community Projects	Students engage in various community-oriented projects, such as infrastructure development, health awareness, and environmental conservation.	Develops a sense of responsibility and hands-on skills in addressing real-world challenges.
Social and Health Awareness	Activities include health campaigns, educational workshops, and environmental initiatives aimed at improving community well-being.	Raises awareness and promotes healthy lifestyles among students and the community.
Development of Personal Values	Participation in NSS instills values such as fearlessness, freedom of expression, and tolerance to change.	Encourages personal growth and the development of strong civic and ethical values.
Professional Skills Development	Involvement in planning, executing, and evaluating projects helps in developing managerial and organizational skills.	Prepares students for professional roles, enhancing their employability and leadership capabilities.

The NSS effectively bridges the gap between academic education and practical societal engagement, fostering a generation of educated, empathetic, and proactive citizens. Through its structured activities, NSS not only enhances the academic environment but also instills essential life skills and social responsibilities in students, making it a vital component of higher education in India. This integration of service and learning cultivates a culture of active citizenship and community awareness among students, which is crucial for their personal and professional development.

7.4 WOMEN EMPOWERMENT - INTERVENTIONS BY NSS

The National Service Scheme (NSS) plays a pivotal role in the empowerment of marginalized communities in India, particularly focusing on women, Dalits, and tribal groups. This table outlines the key aspects of how NSS contributes to empowerment through its structured programs and initiatives, which are designed to integrate students from higher education institutions into community service and development projects.

Table 2: NSS and Empowerment of Marginalized Communities

Aspect of NSS	Description	Impact on Empowerment
Social Service Programs	NSS involves students in social service programs that address community issues, managed by college faculty with government support.	Enhances students' awareness and involvement in societal issues, fostering a sense of responsibility and community service.
Focus on Vulnerable Groups	Targets empowerment of vulnerable groups such as women, Dalits, and tribal communities through various initiatives.	Promotes equality and supports the upliftment of historically marginalized groups by providing them with tools for self-advocacy and rights.
Women's Empowerment	Engages both male and female participants in understanding and addressing the social issues facing women.	Encourages gender sensitivity and action towards gender equality, empowering women within the community.
Infrastructure Projects	Volunteers participate in the planning and execution of infrastructure projects tailored to the needs of vulnerable rural women.	Directly impacts the living conditions and economic opportunities for women, leading to greater empowerment.

Ethical and Moral Development	Encourages academic leaders to guide students in ethical and morally upright behavior through active participation.	Develops a cadre of socially responsible leaders who are aware of and can address the ethical dimensions of community interaction.

Source: (Directorate of NSS; Ministry of Youth Affairs and Sports)

The NSS effectively utilizes the energy and enthusiasm of students to address and mitigate social inequalities through targeted community service projects. By fostering an environment of learning and active participation, NSS not only aids in the personal development of volunteers but also significantly contributes to the empowerment of marginalized communities. This dual impact enriches the educational experience of the volunteers while simultaneously addressing critical social issues, thereby creating a more inclusive and equitable society.

7.5 MOTIVATING FACTORS FOR WOMEN TO JOIN THE NSS

The National Service Scheme (NSS) offers a unique platform for women to engage in community service and development, providing them with opportunities for personal growth and societal impact. This table outlines the key motivating factors that encourage women to participate in the NSS, highlighting how these elements contribute to their empowerment and active involvement in societal issues. (Khwaja Ghulam Saiyidain, 1961).

Table 3: Motivating Factors for Women to Join the NSS

Factor	Description	Impact on Women Volunteers
Empowerment and Engagement	NSS empowers women by involving them in decision-making and leadership roles within community projects.	Enhances self-confidence and leadership skills, fostering a sense of autonomy and influence.
Educational and Cultural Awareness	Participation increases awareness about women's rights and educational achievements.	Promotes gender equality and reduces dropout rates by encouraging educational pursuits.
Skill Development	Volunteers develop various skills through activism, entertainment, and creative projects.	Broadens personal and professional capabilities, enhancing employability and social impact.
**Community	Focus on improving the	Directly improves living

| **Well-being** | community's health and infrastructure, particularly benefiting vulnerable women. | conditions and health outcomes for women in rural areas. |
| **Social Support and Recognition** | Engagement in NSS is often supported by family and peers, providing a strong network of encouragement. | Strengthens social bonds and provides a supportive environment for personal growth. |

The participation of women in the NSS not only empowers them individually but also has a ripple effect on societal norms and community development. Through NSS, women gain valuable skills, experience, and confidence, which are crucial for their personal and professional lives. Moreover, the scheme fosters a supportive environment that encourages women to take active roles in leading and implementing community projects, ultimately contributing to the broader goals of gender equality and social justice. This empowerment model is essential for creating sustainable change and enhancing the status of women in society. (Lakshmi & Gowri, 2011)

8. CONCLUSION

The National Service Scheme (NSS) has successfully empowered women by implementing community service projects that specifically target social inequalities, while also creating a supportive environment for education and personal growth. The study demonstrates that NSS not only improves academic learning by combining it with community service, but also fosters vital life skills and social responsibilities in students. The scheme offers women a platform to acquire valuable skills, enhance their confidence, and actively engage in societal progress, thereby promoting gender equality and social justice. The efficacy of the NSS in empowering women is evident in their expanding societal roles, heightened economic autonomy, and active engagement in decision-making processes, both at local and global levels. The NSS plays a crucial role in fostering empowerment, leadership, and community involvement among students, making it a fundamental aspect in the growth of a socially responsible and proactive citizenry. The combination of personal and community development has a profound effect on the educational experience of volunteers and helps to tackle important social problems, ultimately leading to the creation of a society that is more inclusive and fair.

REFERENCES

Ali, Dr. S. A. A. A. (2019). The Role of NSS towards Students in Higher Education. *International Journal of Trend in Scientific Research and Development*, Vol-3(4), 49–52.

Aninha, L. (2013). The Benefits of Participation in National Service Scheme. *Artha - Journal of Social Sciences*, 12(1), 17.

Baviskar, S. G. (2016). *Youth and NSS role*. Jaipur: Abd Publishers.

Department, India. (1987). *Raashṭriya Seva Yojana saṃhita= National Service Scheme (NSS) manual*. New Delhi: Govt. Of India, Ministry Of Human Resource Development, Dept. Of Youth Affairs And Sports.

Gull, M. (2019). *Rural Women and Women Empowerment*. Society Publishing.

Gupta, S. & Gupta, M. *Role of Women in the 21st Century*. Anmol Publications Pt., Ltd., New Delhi 2000.

Khan, S. (2018). Women Empowerment: Key to Socio-Economic Development. *International Journal of Women Empowerment*, 4(1), 5.

Khwaja Ghulam Saiyidain. (1961). *National service scheme, a report*. Delhi Ministry Of Education, Govt. Of India.

Lakshmi, & Gowri, V. (2011). *Women Empowerment In India*. Vdm Verlag.

Leask, M., & Meadows, J. (2000). *Teaching and Learning with ICT in the Primary School*. Psychology Press.