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CONTENTS

Research Articles

FROM THE EDITOR'S DESK

Politics of Pedagogy: A Threat or Challenge?

Samrat Bisai

Politics permeates everywhere in the human world. Politics can be defined as the set of activities that are associated with decision making or influencing a set of works. Andrew Heywood (2013) defines "Politics, in its broadest sense, is the activity through which people make, preserve and amend the general rules under which they live". To be very precise, politics can be said as an exercise of power.

Pedagogy, on the other hand, can be described as the approach of teaching-learning where both the teachers and learners are engaged in academic transactions and fulfill their learning needs. These academic transactions are complex in nature and are often embedded with rich trajectories. American psychologist Jerome Bruner (1996) said, "Pedagogy is never innocent". Pedagogy is architected by the teachers and it is colored with teachers' academic experiences, personal experiences, attitude towards education and curriculum etc. Therefore, several and unique messages are transacted by the teachers through curriculum and thus pedagogy is politicized by the teachers.

Nonetheless, all the teachers, knowingly or unknowingly engaged in politics of pedagogy because they analyze pedagogy from their own perspectives, color it with their own ideology and try to implement it in the classroom by comparing it with their life experiences. As a result, they only transact those messages which fit into their cognition or schema and impart those ideologies which they believe. Naturally, it is observed that the teachers politicize the pedagogy or they exert a pedagogy which can never be neutral. While transacting pedagogy, teacher initiates a talk which not only revolves into curriculum but also it revolves around curriculum. Therefore, the talk which revolves around the curriculum give the teacher chance to put forth his own opinion, arguments etc. by which they are nourished and the pedagogy is thereby politicized by them.The politics is divided into two sections – White politics and Dark Politics. White politics can be described as those actions in an institution which works in favor of the institution and helps the institution to run smoothly. This kind of politics has nothing to do with color or race, but it represents the brighter side of politics whereas the dark politics represents the gloomy aspects of politics where bad intentions of the teacher are satisfied which harms the existing system of the institution as well as the society in broader perspective.

The teachers use pedagogy not only to impart education, but also to fulfill their personal vision – the vision may be noble or dark, the vision may be pro-institutional or against-institutional.When teachers have noble visions and aims to change the outcome of education positively, white politics is used by the them to refurbish the changes in the educational spaces. But, a teacher uses dark politics when he / she prioritizes his / her personal goals over institutional goals and wants to establish his / her individual identity at the cost of institutional identity.This kind of

attitude often creates conflict between the individual and the institution and institution may face several challenges.

While studying the ontology of institutions, a single institution may hardly be found which is beyond the plethora of politics following its rich trajectories, especially those which are revolving around the employees. When a teacher as an employee of the institution has positive attitude towards an institution and his / her ideology matches with the ideology of institution, he / she creates a positive vibration in the classroom and develops a pro-institutional behavior. This kind of behavior is often beneficial for the institutional growth. But when a teacher cherishes negative attitude towards institutional ideology or uses the institution as a vehicle to fulfill his / her personal ideology or vision, he / she uses dark politics in the institution knowingly or unknowingly.

In this scenario, pedagogy is used as an important tool to validate and implement personal ideology of the teacher in the classroom. The ideologies and beliefs the teachers carry with them have a tremendous influence to the young generations. Hence, a teacher who is carrying a self-centric attitude which might harm an institution in the long run, cannot impart constructive pedagogy in the classroom and it might harm a nation in near future.

What might be the solution of the problem when both white politics and dark politics on pedagogy have tremendous influence in the education system? Is there any silver lining to distinguish between white politics and dark politics? Is dark politics always bad and white politics always good or productive? These questions need further research and productive ideas. It needs intensive reading and creative thoughts. I hope this volume of the journal "Anwesa" will ignite many more intensive thoughts and research questions for further research to understand the real situation and find out the solutions to make a brighter future in the education system.

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REPRESENTATION OF INCLUSIVENESS IN THE CLASS VII ENGLISH LANGUAGE TEXTBOOK OF WEST BENGAL

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ABSTRACT

In a narrower sense, inclusion in education is often considered to be placing only students with disabilities in general education classrooms. But more broadly, it is about creating an all-inclusive school culture that supports all students, regardless of their differences. This school culture embraces adapting the curriculum and instruction to meet the needs of all learners. Here the researchers tried to figure out the inclusive representation of these differences in the content of the Class VII English language textbook of the Government of West Bengal. Inclusive representation in textbooks represents people of different races, ethnicities, genders, sexual orientations, abilities, religions, languages, and socioeconomic backgrounds. There are many reasons why inclusive representation in textbooks is significant. First, it helps students to see themselves reflected in the materials they are learning from. Second, inclusive representation helps students to develop a more accurate understanding of the world around them. The main objective of the study was to explore this inclusive representation in the content of the Class VII English Language Textbook. As for the methodology of the study, the researchers selected the said textbook purposively and the content analysis technique was employed by them as it was the most applicable design for this kind of research. Three types of inclusive representations were considered for analyses. These are Minorities, Gender and Diverse Sexual Identities, and Disabilities, which were suggested by UNESCO regarding inclusive representation of textbook analysis. The systematic database was first compiled by selecting valuable textbook segments, including words, phrases, activities, and pictorial illustrations. With the disassembling process, thorough analysis and interpretation were done. The full paper with its analyses and interpretations will be able to make a superior understanding regarding inclusive representation in the content of that said book. It can also convey a strong message to the stakeholders about the status of inclusive representation in one of the textbooks in the Government of West Bengal curriculum.

Keywords: Inclusiveness, English Language Textbook, Class VII, Curriculum

INTRODUCTION

Inclusiveness is a practice that ensures that everyone is welcomed and respected, regardless of their gender, caste, ethnicity, sexual orientation, disability, religion, or other personal characteristics. It means creating an environment where everyone feels valued and supported and has the opportunity to participate and succeed. Inclusiveness is important in all aspects of life, including in the workplace, in schools, in communities, and society as a whole. Not only to maintain its importance but it should also be adapted in all areas of life, from personal to professional. It is about making a conscious effort to include everyone and to create an environment where everyone feels comfortable and valued. Academics are also a vital part of it as the children are involved in it. A very mindful effort is being made to maintain an inclusive school culture in our society, but whether the inclusive representation is followed in their curriculum or more specifically in their textbooks has also to be addressed. Inclusive representation in textbooks is the practice of representing people of different races, ethnicities, genders, sexual orientations, abilities, religions, languages, and socioeconomic backgrounds. There are many reasons why inclusive representation in textbooks is significant. First, it helps students to see themselves reflected in the materials they are learning from. Second, inclusive representation helps students to develop a more accurate understanding of the world around them.

As UNESCO uttered, "With regard to the general aim of inclusion and inclusive education, school curricula and textbooks are crucial in several relevant aspects. The modes of representation within textbooks and curricula should appropriately reflect the diversity of different groups of individual students. Curricula and textbooks should include the representation of diverse identities and be free from divisive stereotypes and prejudices" (Paper commissioned for the 2020 Global Education Monitoring Report, Inclusion and Education, 2020).

Sleeter and Grant (2003) analyzed 47 Art, Science, Mathematics, and Social Studies textbooks, applying pictorial and textual analysis to map disability-related content. It was found that disability issues were seldom mentioned in the textbooks. Storylines ignored people with disabilities. The pictorial analysis revealed that people with disabilities were almost absent. An evident difference between male and female illustrations in the case of intellectual qualities was found by Kumari (2014), where less than 10% of female illustrations were shown to portray their cognitive abilities while more than 90% of the male illustrations were shown to do the same. Research by Pudas (2013) revealed that in Finland, school textbooks had led to an increase in racism in Finnish schools. The research also found that the required association between pedagogy and textbooks does not promote Global Education in the classroom. Another study by Ahmad & Shah (2019) showed that the content of 5th Grade English Language Textbooks was highly gender biased which represented males more than females. It also revealed that the textbook had been designed to keep male dominance in implicit as well as explicit ways.

OBJECTIVES

O1: To explore Inclusive Representation in the Class VII English Language Textbook content regarding 'Minorities'.

O2: To explore Inclusive Representation in the Class VII English Language Textbook content regarding 'Gender and Diverse Sexual Identities'.

O3: To explore Inclusive Representation in the Class VII English Language Textbook content regarding 'Disabilities'.

RESEARCH QUESTIONS

RQ1: What is the status of Inclusive Representation in the Class VII English Language Textbook content regarding 'Minorities'?

RQ2: What is the status of Inclusive Representation in the Class VII English Language Textbook content regarding 'Gender and Diverse Sexual Identities'?

RQ3: What is the status of Inclusive Representation in the Class VII English Language Textbook content regarding 'Disabilities'?

METHODOLOGY

As part of the methodology of the study, the researchers purposefully selected only the Class VII English Language Textbook to use in this qualitative research. The name of the book was 'Blossoms'; Eleventh Edition: December 2022, which was the latest printed textbook at this level, published by the West Bengal Board of Secondary Education (WBBSE), Government of West Bengal. The book has 13 lessons or chapters and one revision lesson. The present researchers reviewed all those lessons. The content analysis under the qualitative research technique was used as it is the most applicable design for this type of research (Budd, Thorp, & Donohew, 1967; Lindkvist, 1981; McTavish & Pirro, 1990; Tesch, 1990).

The UNESCO identified 5 guiding are as of inclusiveness for analysis in the textbooks, namely 'Human Rights & Citizenship', 'Minorities', 'Gender & Diverse Sexual Identities', 'Disabilities', and 'Socially Underprivileged Groups', as a global mapping of the inclusiveness of textbooks in its Global Education Monitoring Report, 2020. This study was delimited to the 3 areas only namely, 'Minorities', 'Gender & Diverse Sexual Identities', and 'Disabilities'. The area, 'Minorities' reflects whether and how these are represented in the textbooks, on various phenomena and forms of inclusion and exclusion. The area,'Gender & Diverse Sexual Identities' refers to the aspects of an equal and suitable representation of males and females, focusing on depicting and evaluating their active roles and participation in society. The area of 'Disabilities' assists in investigating whether, how, and to what extent persons with disabilities are represented and given consideration (Paper commissioned for the 2020 Global Education Monitoring Report, Inclusion, and Education, 2020).

ANALYSIS AND DISCUSSION

The systematic database was first compiled by selecting appropriate textbook segments, including words, phrases, activities, and pictorial illustrations. These appropriate selections were made based on some pre-determined catalogue of questions, suggested by the UNESCO Global Education Monitoring Report, 2020. These segments were considerately grouped and enumerated. With the disassembling process, thorough analyses were done with the help of Categorizing, Coding, and Memoing.

O1 & RQ1: Analysis & Discussion Regarding Inclusive Representation of the 'Minorities'

As per the UNESCO Global Education Monitoring Report, 2020, it was suggested to focus on the following catalogue of questions in assessing the textbook regarding the inclusive representation of 'Minorities' like:

- Whether different minorities are represented or not,
- Which kinds of minorities are represented? e.g., ethnic and racialized, religious, or other minorities,
- Are they represented stereotypically?

The analysis regarding the first objective exhibited that diverse minorities (e.g., ethnic and racialized, religious, or other minorities) are seldom represented in that book. A sum of 136 occurrences was noticed by the researchers where the 'minorities' aspect came in the book. However, only the religious instances were depicted and the three major religious examples were only found, i.e., Hinduism, Islam, and Christianity, though the representation of these religions was not alike. The adjacent figure (Figure 1) shows a quick look at it, where it is seen that quite half of the instances were found in Hinduism (47%). The rest is of Christianity (35%) and Islam (18%).

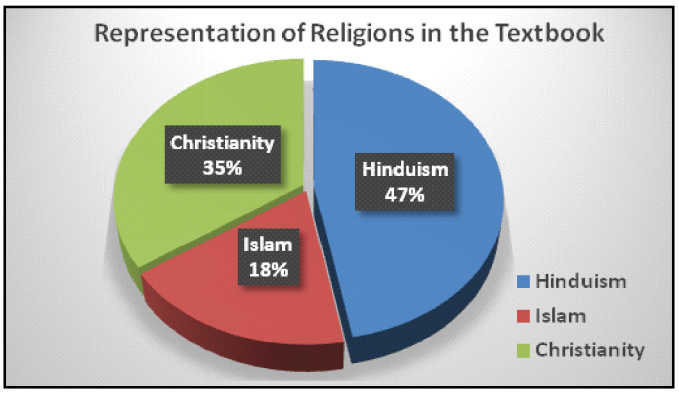

Figure 1: Representation of Religions in the Textbook

The depicted religions were observed in a normal manner with the content of the text. No such stereotypical pieces of evidence were noticed by the researchers, where one religion was glorified or the other was condemned.

5.2 O2 & RQ2: Analysis & Discussion Regarding Inclusive Representation of the 'Gender and Diverse Sexual Identities'

As per the UNESCO Global Education Monitoring Report, 2020, it was suggested to focus on the following catalogue of questions in assessing the textbook regarding the inclusive representation of 'Gender and Diverse Sexual Identities like

- Whether the texts are appropriately gendered or not,
- Whether a balanced representation of gender (male and female) in pictures and illustrations is maintained or not,
- Are there any elements of stereotypical representations of gender biases in the text or images that favour one sex over the other?

This textbook was prepared by the Experts Committee under the Textbook Development Committee of West Bengal. There were 10 members of the committee. It is to be mentioned that among those 10 members, there were only 3 female members as experts on the committee. The textbook was enriched with the works of various writers and poets. There were 13 lessons or chapters in that book. While discussing on second objective, it was firstly found that the selection of authors and poets of those 13 lessons was not appropriately gendered. There was only an 8% representation of female authors in the textbook, with the rest of the lessons being contributed by male authors (Figure 2).

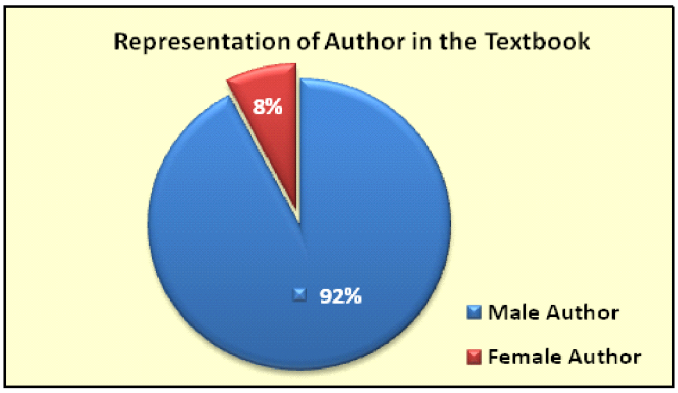

Figure 2: Representation of Author in the Textbook

While analyzing the 'Gender and Diverse Sexual Identities' in the texts of the book, it was found that more than 60% of characters were of male identities (63%), while 36% of characters were of female identities. No character was found as other diverse sexual identities or so. The adjacent figure (Figure 3) shows a quick look at it.

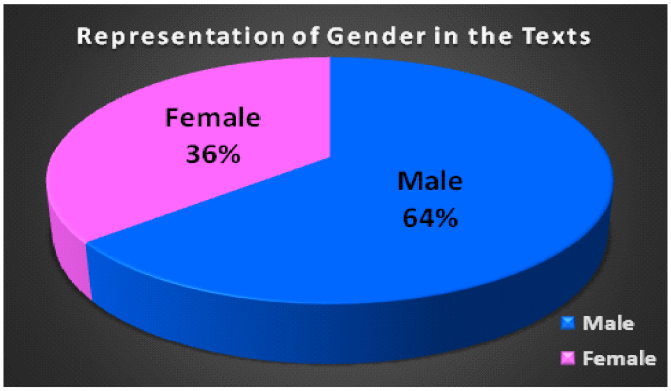

Figure 3: Representation of Gender in the Texts

All the images or pictorial illustrations were also analyzed by the researchers. It was found that there was a total of 31 images in that book. Out of those, there were 4 images with no characters, and 27 images had some characters in the image. Out of those 27-character images, the researchers got 12 images that were of male characters and 5 that were of female characters. And, when we considered 10 common pictures, male characters appeared 33 times while female characters appeared only 8 times. Now, if we consider all the images of the book, including single images as well as common images, it was seen that 45 male characters and 13 female characters were there, which is shown in Figure 4.

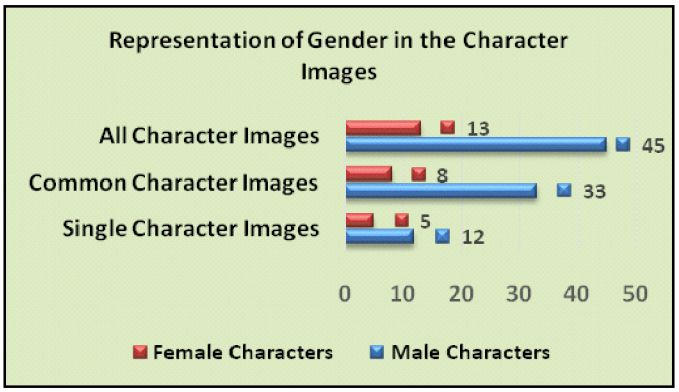

Figure 4: Representation of Gender in the Character Images in the Textbook

The inclusive representation of Gender was followed in some of the images in the book. The image (Figure 5) below shows that kind of representation.

Figure 5: Inclusive Representations of Gender in the Textbook

Figure 6: Stereotypical Representations of Gender in the Textbook

However, there were elements or portrayals of stereotypical representations of gender in the text as well as in the images (Figure 6) that favour one sex over the other. The male dominances were very clear regarding occupational roles, outdoor activities, and indoor activities. Though in some of the instances, stereotypical representations are absent, it is prevalent in most of the cases. While analyzing the content texts of the book, the following categories were concluded from the derived codes through the content analysis process, which are shown below (Table 1). Later in this section, each category is discussed in brief keeping in mind the stereotypical representations of gender in the textbook.

Table 1: Generated Codes and Categories Regarding Stereotypical Representations of Gender in the Textbook

Sl. No.	Generated Codes	Generated Categories
1	Mother's Cooking	Activity Orientation
2	Father's Chatting	
3	Father's Secured Job	
4	Charwoman	
5	Mother in Home	
6	Higher Job of Man	
7	Cart-man	
8	Father is Out of Town	
9	Male Gardener	
10	Tree Hacking by Men	
11	Outside Work by Females	
12	Girl's Grace	Physical Portrayal
13	The Long Hair of the Girl	
14	Beauty of Girl	
15	Good looking Girl	
16	Handsome Prince	
17	Charming Woman	
18	Fair Daughter	
19	Beautiful Cheeks of Girl	
20	Thick and Curly Hair of Girl	
21	Jewellery for Woman	
22	Girl's Singing	
23	Girl's Dancing	

24 25 26 27	Boy's playing in the Field Diary Writing by Women Outdoor Games by Girls Boy's Singing	Representative Roles
28 29 30 31 32 33 34 35 36 37 38	Loud talking of Man Fast Running by Girl Fuss by Woman Sports loving Man Liking of Fast Cars Risk Taking Girl, Facing Challenge Brave Girl Lovable Girl Honest Man Nine Gems of Akbar	Distinctive Associations

- ***Activity Orientation:*** This category was developed by the derived codes, which were similar regarding the work or job or the associated activities. It was seen that, in most of the cases, the male characters were shown in outside activities and/or laborious actions whereas the female characters were seldom shown in that manner, otherwise, they were shown in domestic efforts or lingering in the home situation. It surely and positively represented the gender stereotypical position in the book.

- ***Physical Portrayal:*** Quite outrageously, a large number of the female characters' portrayal was presented in a bodily custom. Though those were adoring their beauties, at the same time, no such parallel presentation was found by the researchers regarding their merit. A few male characters' bodily portrayals were also there.

- ***Representative Roles:*** Some of the representative roles were identified and coded. It was analyzed and perceived by the researchers that, in this category, the representation of gender was maintained in the book. And no such stereotypical shreds of evidence were observed.

- ***Distinctive Associations:*** This is the category, which was developed through the analysis of various distinctive associations of both male and female characters portrayed in the textbook. More than ten codes were generated, where it is observed that both the male and female characters were represented in a risk-taking, challenging, and fussy situation. However, the representatives were not balanced. A

slight inclination of stereotype representation was detected by the researchers in favour of the male characters.

O3 & RQ3: Analysis & Discussion Regarding Inclusive Representation of the 'Disabilities'

As per the UNESCO Global Education Monitoring Report, 2020, it was suggested to focus on the following catalogue of questions in assessing the textbook regarding the inclusive representation of 'Disabilities'.

- Whether the people with disabilities are represented in the texts and visual material?
- Are they represented in a stereotypical way i.e., as dependent, less happy, passive, helpless?
- Whether the people with disabilities appear in everyday life or mainly in the context of care?
- Are different types of disability represented in the textbook?

In a quite shocking finding, it was observed that no single evidence of the presence of people with disabilities is present in the texts and visual material in the book. There were 13 lessons in that book. But there were neither any mentions nor any examples were portrayed in the book. The Storylines ignored people with disabilities. As a result, the researchers failed to categorize different types of disabilities and the stereotypical shreds of evidence in the textbook. In that sense, it can be alleged that inclusive representation of the Class VII English Language Textbook, published by the West Bengal Board of Secondary Education (WBBSE), Government of West Bengal regarding 'Disabilities' was not maintained at all.

MAJOR FINDINGS

Several significant research findings regarding inclusiveness in textbooks emerged from this research of the Class VII English Language Textbook, published by the West Bengal Board of Secondary Education (WBBSE), Government of West Bengal. These are briefly mentioned below.

- Different minorities (e.g., ethnic and racialized, religious, or other minorities) are hardly represented regarding the inclusive representation of the 'Minorities'. Only three major religions were portrayed. However, those also were not balanced. No stereotypical representations regarding minorities were noticed by the researchers.

- The selection of the authors of the 13 lessons or chapters in the textbook is not appropriately gendered. A balanced inclusive representation was hard to observe between males and females in terms of 'Gender and Diverse Sexual Identities' in the content of the text and also in the pictures and

illustrations. There were elements of gender bias and gender stereotypes in the text and in the images that favour one sex over the other.

- There was no single evidence of the presence of people with disabilities in the texts in the book. Storylines ignored people with disabilities here. The pictorial analysis also revealed that people with disabilities were absent. So, there was no scope to find out different types of disabilities or stereotypical ways of their representation in the content of the text and the content of pictures and illustrations by the researchers.

CONCLUSION

Based on the findings of this study, it is clear that there is a need for more inclusivity in the English language textbook of West Bengal. Students from all backgrounds deserve to see themselves reflected in the materials they use to learn. This is especially important for students who are often under-represented in the media and society. The study found that there was a significant lack of diversity in terms of 'Minorities', 'Gender & Diverse Sexual Identities', and 'Disabilities' in English language textbooks. This particular English language textbook had no single representation of Disabilities. It is very alarming and annoying. This lack of representation can hurt students' self-esteem and sense of belonging. The message it conveys can also imply that certain groups of people are considered less essential or valuable than others. Several things could be done to improve the inclusivity of these English language textbooks. The Textbook Development Committee can ensure that the textbooks feature a diverse range of characters from different backgrounds. Both male and female author's works should be included. Stereotypical representations of different groups of people can be avoided. The use of inclusive language can be promoted that does not discriminate against any group of people. Teachers can also play a pivotal role in promoting inclusive representation in the classroom. They can supplement textbooks with other materials that feature a diverse range of voices and perspectives. They can talk to their students about the importance of inclusive representation and how it can help to create a more inclusive and welcoming classroom environment. It is recommended that textbooks should feature an equal number of male and female characters, both male and female characters should be portrayed in a variety of roles and occupations, including positions of power and authority and most importantly the representation of persons with disability should be encouraged. By improving inclusive representation in English language textbooks, we can help to create a more inclusive and equitable society for all students.

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SMARTPHONE ADDICTION OF COLLEGE STUDENTS IN WEST BENGAL AND ITS EFFECT ON THEIR ACADEMIC ACHIEVEMENT

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ABSTRACT

The present study was conducted to analyze the level of Smartphone addiction of college students with respect to gender, residential zone, college type and different age groups and also to investigate its relation with students' academic achievement. 100 students were randomly selected from five (5) colleges in West Bengal under four categorical variables namely gender (male & female), residential zone (rural, urban & semi urban), college type (General degree college & Teachers' training college) and different age groups (18-21 years, 22-25 years & above 25 years). English version Smartphone addiction test was prepared and used for the said purpose. In the present study, significant difference was observed among the students in their Smartphone addiction with respect to gender ($t=2.359$, $p=0.020$), but no such significant difference was observed among the students with respect to different age groups ($F= 0.167$, $p=0.846$), residential zone ($F=0.973$, $p=0.382$) and college type ($t=1.670$, $p= 0.098$). It was found that there was significant negative correlation between academic achievement & Smartphone addiction ($r= -0.688$, $p=.000$). Also, significant difference was found among the students in their academic achievement ($p<0.01$) in relation to different levels of Smartphone addiction (high, moderate & low). The result revealed that low Smartphone addicted students' academic performance was better in presence of the remaining two levels (high & moderate) and moderately addicted students performed better in academic subjects than that of highly addicted students. It is quite evident that Smartphone addiction is negatively correlated with academic achievement of the students.

Key words: Smartphone Addiction, Academic Achievement, College Students

INTRODUCTION

Smartphone addiction is a serious problem among the students right from school education to higher education. Mobile addiction is defined as chronic or periodic obsession caused by repeated use of mobile phones, which may lead to intense and sustained demand and reliance (Encyclopedia of Mobile Phone Behaviour, 2015). Smartphone powered by the Android System is no doubt a noteworthy invention in the field digital world. We are able to know everything relating to our daily life by using Smartphone with internet facilities. But misuse of Smartphone is harmful to socio-cultural progress. 'Addiction' is a term meaning thereby 'being abnormally dependent on something'. It is a growing tendency of many college students to be addicted to Smartphone and they can easily get the whole world through touching screen. Smartphone can be used effectively for meeting personal requirements in terms of study, research, job related activities, searching required data & information, online transaction, booking tickets for various purposes, entertainment etc. Actually, our aim is to make the world digitized. It is evident that while normal students use Smartphone for academic purposes and associated areas, addicted students mostly use Smartphone without any definite reason. Due to this reason, presently the effect of Smartphone addiction on students' academic achievement has become a widely studied topic to many psychologists and educationists. The researchers went through various research articles. For the present study, some of the research articles have been presented in synoptic way. Roy, Pal & Maiti (2016) conducted a study on internet use and internet addictive behaviour of student teachers of secondary teachers' training institutes and observed that, student teachers in general exhibited moderate to low level of internet addictive behaviour. Foenet al. (2017) observed that more students utilized their Smart phones for University learning activities, the lower their CGPA (Cumulative Grade Point Average). Chen et al. (2017) reported that factors associated with Smartphone addiction among male students were the use of game app, anxiety & poor sleep quality whereas factors for female students were use of multimedia applications, use of social networking services, depression, anxiety & poor sleep quality. Kaur (2018) conducted a study on impact of mobile phone usage on the academic performance of students and found that the college going students were influenced by mobile phones usage to greater extent and due to this their academic activities were getting hampered. Choudhury &Tripathy (2018) found that, Smartphone usage had a negative impact on academic performance. Simon & Stijn (2020) conducted a literature review on Smartphone use and academic performance. Analysis of literature revealed a predominance of empirical results supporting a negative association between students' frequency of Smartphone use and their academic success. Mukhdoomi et al. (2020) undertook a study and concluded that until and unless students were intrinsically motivated, they could not use Smartphone in a positive way. Sunday et al. (2021) focused attention on the effects of Smartphone on

learning and conclude that greater the use of Smartphone while studying, the greater the negative impact on learning. Achangwaet al. (2022) showed that Smartphone addiction was associated with physical health leading to sleep disorder and neurological problems and also observed that academic performance was negatively associated with Smartphone addiction. Alharbi & Mohamed (2022) showed a statistically significant correlation between Smartphone addiction and decrease in the academic performance of college students. The study conducted by Wang et al. (2022) revealed that the students in the high Smartphone use group were academically outperformed than those in the low Smartphone use group and simultaneously the researcher indicated that Smartphone use constituted a potential inequality in learning opportunities among elementary school children. Norazman & Mothar (2023) in their study showed that addiction to mobile phones had a negative impact on academic performance. Subba & Chingnunhoih (2023) conducted a study where male students were found to be procrastinating more than the female students, whereas female students were more prone to Smartphone addiction as compared to their male counterpart. Zhang & Zeng (2024) reported that, there was a significant negative correlation between Smartphone addiction & academic achievement. Hashemi et al. (2024) in their study showed that, undergraduate students were highly addicted to Smartphone and the excessive use of Smartphone had an adverse effect on academic performance of students. The result also revealed that there was statistically significant difference in Smartphone addiction with respect to respondents' gender. Jingqian (2024) reported that there was a significant negative correlation between mobile phone addiction and attention of the students and also observed that addicted students exhibited lower attention span and poorer academic performance. However, though a lot of studies have been conducted in the field of Smartphone addiction and its effect on academic performance, in spite of that there is a deficiency of quality research works on effect of Smartphone addiction of college students in Indian context. Taking into consideration the increasing number of Smartphone addicted college students; it was felt necessary to undertake a study on Smartphone addiction of college students (both general degree & teachers' training colleges) and its effect on their academic achievement.

OBJECTIVES OF THE STUDY

a) To study the nature of Smartphone addiction of the college students.
b) To study the difference, if any, between male and female students with respect to their Smartphone addiction.
c) To study the difference, if any, among various age group students with respect to their Smartphone addiction.
d) To study whether there exist any differences among the students towards Smartphone addiction with respect to their residential zones.

e) To study the difference, if any, between Degree college students and Teachers' training college students with respect to their Smartphone addiction.
f) To study the effect of Smartphone addiction on students' academic achievement.

HYPOTHESES OF THE STUDY

H01: There is no significant difference lies between male and female students with respect to their Smartphone addiction.

H02: There is no significant difference lies among various age group students (18-21 years, 22-25 years, above 25 years) with respect to their Smartphone addiction.

H03: There is no significant difference lies among urban, rural and semi urban students with respect to their Smartphone addiction.

H04: There is no significant difference lies between Degree College and teachers' training college students with respect to their Smartphone addiction.

H05: There is no significant relationship lies between Smartphone addiction and academic achievement of the college students.

H06: There is no significant difference among high, moderate & low Smartphone addicted students with respect to their academic achievement.

SAMPLE

All the students studied in General Degree Colleges and Secondary Teachers' Training Colleges in West Bengal in the age groups of 18 to 21, 22 to 25 and above 25 years were selected as population for the present study. From the list of affiliated Degree and Secondary Teachers' Training colleges in West Bengal, 5 colleges (of which 3 General Degree Colleges & and 2 Secondary Teachers' Training Colleges) were selected randomly from Kolkata, North 24 pargana and South 24 pargana districts. Of the 5 colleges 3 colleges (2 General Degree Colleges & 1 Teachers' Training College) were selected for final study and 2 colleges (1 General Degree College & 1 Teachers' Training College) were selected for pilot survey. On the basis of approval from respective college authorities,100 students were selected for the present study following random sampling technique.

Table1: Demographic characteristics of the sample

Categorical variables	Sub category	Sample size	Total
Gender	Male	50	100
	Female	50	
Residential zones	Rural	14	100
	Urban	60	
	Semi-urban	26	
Age group	18 to 21 years	33	100
	22 to 25 years	34	
	Above 25 years	33	
College type	General Degree college	45	100
	Teachers' Training college	55	

TOOLS USED

A self-made English version Smart Phone Addiction Test (SPAT) was developed by the researchers. The SPAT comprising of 27 test items with corresponding response options arranging in a 5-point Likert type scale with options like 'Strongly agree', 'Agree', 'Neutral', 'Disagree', 'Strongly disagree'. A student taking the test had to indicate his/her position simply by ticking right (√) in any one of the cells. The test responses were then scored and total marks obtained by the participating students in their last semester examination were also collected. The total marks in their semester examination were considered to be their academic achievement scores.

TECHNIQUES FOLLOWED

Pilot Survey

A sample comprising 50 students (Male-25, Female-25) was selected randomly from 2 different colleges (1 Degree College & 1 Teachers' Training College) and then the draft Smartphone Addiction Test was administered on them keeping in view the following objectives:

a. Rectification of instruction, if any, before finalization of the test.
b. Determination of item validity.
c. Determination of the reliability of the test.
d. Determination of norms of the test.

Item validity

Item validity was determined by computing item total correlation for each item. For the said purpose Person Product Moment Correlation technique was adopted. The results are shown in Table 2.

Table 2: Item total correlation of each item of the Smartphone Addiction Test (N=50)

Item No.	Item Total Correlation	Item No.	Item Total Correlation	Item No.	Item Total Correlation
1.	0.274*	10.	0.380**	19.	0.360**
2.	0.279*	11.	0.276*	20.	0.288*
3.	0.281*	12.	0.430**	21.	0.415**
4.	0.441**	13.	0.290*	22.	0.495**
5.	0.452**	14.	0.292*	23.	0.358**
6.	0.420**	15.	0.330*	24.	0.283*
7.	0.275*	16.	0.288*	25.	0.440**
8.	0.263*	17.	0.355**	26.	0.465**
9.	0.297*	18.	0.296*	27.	0.281*

*Significant at 0.05 level of significance, **Significant at 0.01 level of significance

All the items in Table 2 correlated significantly (ranging from 0.238 to 0.495) with the total score and also it reveals that no item was negatively correlated with the total score. Moreover, the contents of the items were rated very high by three experts. Considering this, the researchers were decided to retain the items in the final test. Good item validity is itself a guarantee of the test validity. Since all the items were scanned and rated by the experts, the content validity was also ensured for the Smartphone addiction test.

Reliability of the test

Reliability coefficient was determined by Cronbach Alpha method and was found to be 0.541which is good to be accepted for social study.

Statistical technique used

Data analysis was carried out with the help of descriptive statistics, independent sample t-test, correlation statistics and one way ANOVA using Software Packages for the Social Sciences (SPSS) version 20.0.

Scoring procedure

The test responses were scored like 5, 4, 3, 2,1& 1, 2,3,4,5 for positive and negative test items respectively.

Norms

For the present study, the percentile norms and norms in terms of mean and standard deviation of each sub group & combined group were developed. The percentile points calculated for the present test are presented in Tables 3, 4 & 5.

Table 3: Percentile range and corresponding Smartphone addiction scores

Test	Sample distribution	Smartphone addiction scores	No. of students	Level of addiction
Smartphone	Upper 25% (above P_{75})	Above 82	23	High
Addiction	Middle 50% (P25-P_{75})	71 to 82	54	Moderate
Test	Lower 25% (below P_{25})	Below 71	23	Low

Table 4: Mean and Standard Deviation of the Smartphone addiction scores of the combined group

Mean	Standard Deviation
77	8.93241

Table 5:Mean and SD of the different categorical variables

Categorical variables		Mean	Standard Deviation
Gender	Male	78.96	9.38074
	Female	74.84	8.03401
Residential zones			
	Urban	76.53	8.69648
	Rural	80.25	6.06218
	Semi urban	76.19	10.4423
College type			
	General college	78.57	9.63853
	Training college	75.56	8.25914
Age group (Years)	18-21	76.61	8.54012
	22-25	76.49	8.19746
	Above 25	77.66	10.2441

ANALYSIS AND INTERPRETATION

Descriptive statistics

The raw scores of Smartphone addiction test obtained by the sample (N=100) were arranged in frequency distribution. The mean, median, mode, standard deviation (S.D.), range, skewness & kurtosis were computed and presented in Table 6.

Table 6: Descriptive statistics

Mean	Median	Mode	Range	S.D.	Skewness	Kurtosis
77	77	74	47	8.93241	-0.030	0.354

The descriptive statics in Table 6 for Smartphone addiction scores reveals that the Mean, Median and Mode values are almost same. The standard deviation also reveals that variability of the scores is small. The Skewness and Kurtosis values indicate that the distribution is near normal though the curve is little flatter and negatively skewed. Frequency graph of the Smartphone addiction scores of the students under study presented in Figure 1.

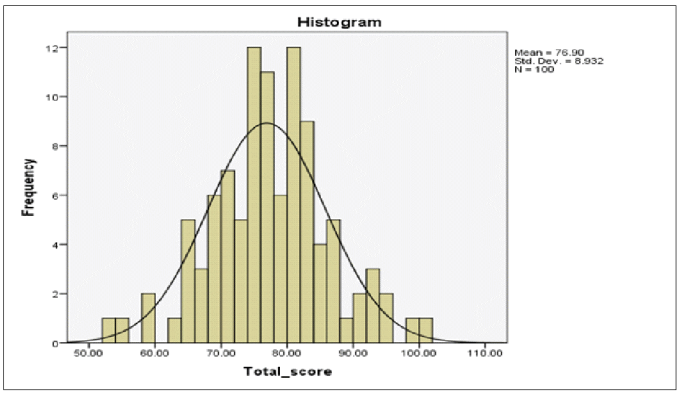

Figure 1: Frequency graph of Smartphone addiction scores

TESTING OF HYPOTHESES

H01: There is no significant difference lies between male and female students with respect to their Smartphone addiction.

Table 7: Result of independent sample t-test

Testing of Hypotheses	Dependent variable	Independent Variables	N	Mean	Mean Difference	t-value	df	Remark
$H_0$1	Smartphone addiction	Male	50	78.96	4.12	2.359	98	p value is significant at 0.05 level(p=0.020)
		Female	50	74.84				

From the above table (Table 7), the result of independent sample t-test reveals that the calculated t-value (2.359) for H01 is significant at 5% level (p=0.020). So, there exists 'significant' difference between male (Mean=78.96) and female (Mean=74.84) in their addiction to Smartphone. The null hypothesis, H01 is, therefore, rejected. This result is also presented graphically in Figure 2.

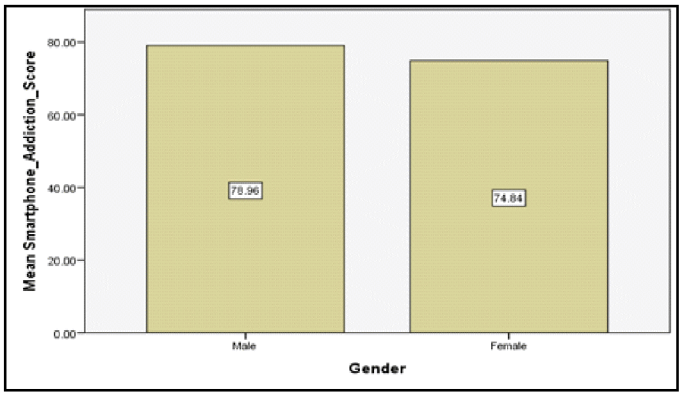

Figure 2: Graphical representation of Mean Smartphone addiction scores with respect to gender

H02: There is no significant difference among various age group students (18-21 years, 22-25 years, above 25 years) with respect to their Smartphone addiction.

Table 8: Result of One-way ANOVA based on different age groups

Testing of Hypothesis	Sources of Variance	Sum of Squares	df	Mean Square Variance	F	Remark
$H_0$2	Between Groups	27.160	2	13.580	0.167	p value is not significant at 0.05 level(p=0.846)
	Within Groups	7871.840	97	81.153		
	Total	7899.000	99			

The result of one-way ANOVA (Table 8) reflects that, the calculated value of F (0.167) for H02is not significant at 5% level (p=0.846). The null hypothes is H02 is, therefore, accepted. So, it can be interpreted that, there is no 'significant' difference among the students of 18-21 years (Mean=76.61), 22-25 years (Mean=76.49) and above 25 years (77.66) with respect to their Smartphone addiction. This result is presented graphically in Figure 3.

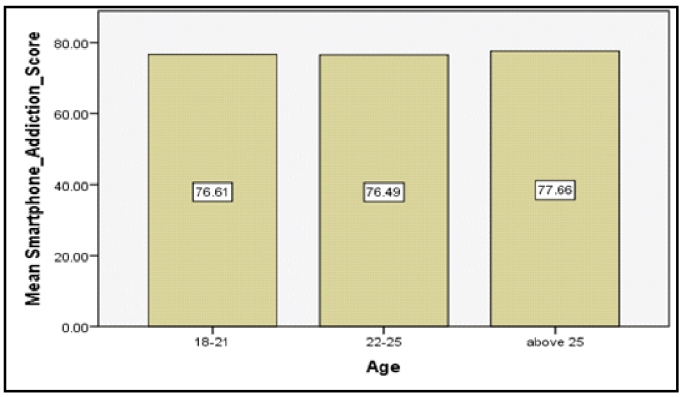

Figure 3: Graphical representation of mean Smartphone addiction scores with respect to different age groups

H03: There is no significant difference lies among urban, rural and semi urban students with respect to their Smartphone addiction.

Table 9: Result of One-way ANOVA based on residential zones

Testing of Hypothesis	Sources of Variance	Sum of Squares	df	Mean Square Variance	F	Remark
$H_0$3	Between Groups	155.357	2	77.678	0.973	p value is not significant at 0.05 level (p=0.382)
	Within Groups	7743.643	97	79.831		
	Total	7899.000	99			

The result of one-way ANOVA (Table 9) reflects that, the calculated value of F (0.973) for H03 is not significant at 5% level (p=0.382). The null hypothesis H03 is, therefore, accepted. So, it can be interpreted thatthere is no 'significant' difference among the students of rural (Mean=80.25), urban (Mean=76.55) and semi urban (Mean= 76.19) zones with respect to their Smartphone addiction. This result is presented graphically in Figure 4.

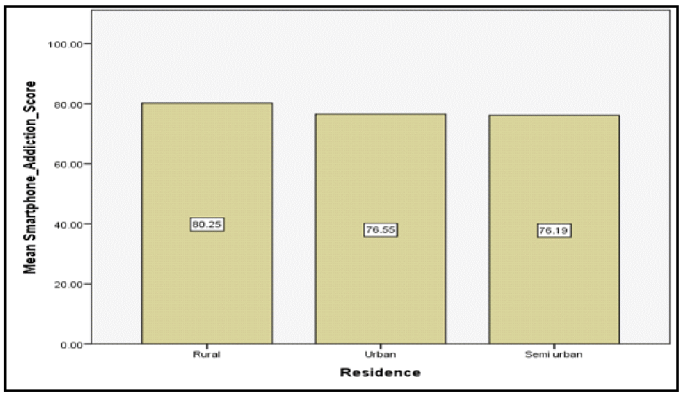

Figure 4: Graphical representation of mean Smartphone addiction scores in relation to residential zones.

H04: There is no significant difference lies between Degree College and teachers' training college students with respect to their Smartphone addiction.

Table 10: Result of independent sample t-test

Testing of Hypotheses	Dependent variable	Independent Variables	N	Mean	Mean Difference	t-value	df	Remark
H_04	Smartphone addiction	General college	45	78.56	3.00	1.670	98	p value is not significant at 0.05 level(p=0.098)
		Teachers' training college	55	75.56				

From the above table (Table 10), the result of independent sample t-test reveals that the calculated t-value (1.670) for H04 is not significant at 5% level (p=0.098). So, there exists no 'significant' difference between general college (Mean= 78.56) and teachers' training college students (Mean=75.56) in their addiction to Smartphone. So, the null hypothesis H04 is accepted. This result is presented graphically in Figure 5.

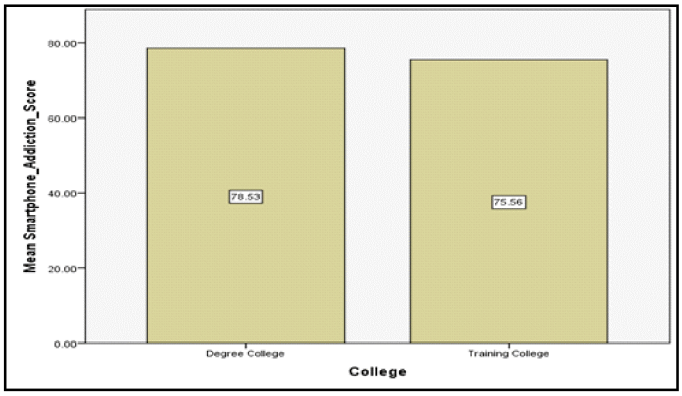

Figure: 5. Graphical representation of mean Smartphone addiction scores with respect to college type

H05: There is no significant relationship lies between Smartphone addiction and academic achievement of the college students.

Variables	Value of 'r'	Remark
Academic achievement & Smartphone addiction	-0.688	p value is significant at 0.01 level (p=.000)

The computed value of 'r' (Table 11) is significant at .01 level (r= -0.688, p=.000). So, the null hypothesis H05 is rejected. It can now be interpreted that, the level of Smartphone addiction (high, moderate or low) of the college students under study plays negative role in their academic achievement.

H06: There is no significant difference among high, moderate & low Smartphone addicted students with respect to their academic achievement.

Table 12: Result of one-way ANOVA based on students' academic achievement in relation to different groups of Smartphone addiction

Testing of Hypothesis	Sources of Variance	Sum of Squares	df	Mean Square Variance	F	Remark
$H_0$6	Between Groups	17588.863	2	8794.431	111.805	p value is significant at 0.01 level(p=0.000)
	Within Groups	7629.877	97	78.659		
	Total	25218.750	99			

The result of one-way ANOVA (Table 12) indicates that the calculated value of F (111.805) for H05 is significant at 1% level (p=0.000). The null hypothesis H05 is, therefore, rejected. So, it can be interpreted that, there is significant difference in academic achievement of the students under study in relation to different groups of Smartphone addiction. The scores are further subjected to t-test as follows:

Table 13: Result of Multiple Comparisons based on academic achievement of different groups of Smartphone addiction

(I) Category	(J)Category	Mean Difference(I-J)	Standard Error	Significant
High	Moderate	-9.88084	2.20830	.000**
	Low	-37.00000	2.61532	.000**
Moderate	High	9.88084	2.20830	.000**
	Low	-27.11916	2.20830	.000**
Low	High	37.00000	2.61532	.000**
	Moderate	27.11916	2.20830	.000**

**Significant at 0.01 level of significance

The pair wise comparisons table (Table 13) contains some redundancy. The first row focusing on academic achievement of highly Smartphone addicted group (Mean=50.30) and compares the other two groups [Moderate (Mean=60.19) & Low (Mean=87.30] to it. The result reflects that the differences are found to be significant at 1% level (p=0.000). Results of other two rows suggest that, the differences are also significant at 1% level (p=0.000). So, the null hypothesis H05 is rejected. It can be interpreted that, 'significant' difference exists among high, moderate and low Smartphone addicted groups with respect to their academic achievement. The result is presented graphically (Figure 6) to show the mean varies between various groups of data.

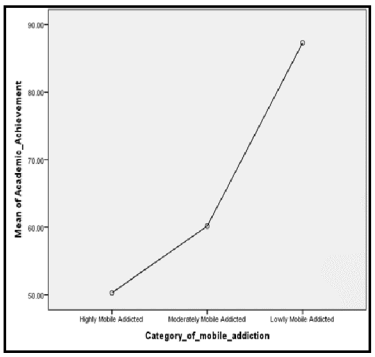

Figure 6: Mean plot based on the scores of academic achievement & Smartphone addictions

DISCUSSION

Generally, the term 'addiction' is taken from negative aspect. Usage of Smartphone varies from person to person. In the present study, significant difference has been found between male and female college students with respect to their addiction in Smartphone. Here male students are comparatively more addicted (Mean=78.96) than their female counterpart (Mean=74.84). This result finds support from the investigations of Hashemi et al. (2024) & Chen et al. (2017). This may be due to the fact that, in addition to using social networking applications, multimedia and digital transactions males are more involved in playing Smartphone games. But this finding did not get support from the study conducted by Subba & Chingnunhoih (2023) where it was found that female students were more prone to Smartphone addiction as compared to male students. No significant difference was found among the college students with respect to their residential zone, different age groups and the nature of colleges where they used to study. It is quite natural. It is because, presently advancement of android technology and availability of internet facilities & unlimited talk time offered by different companies (such as BSNL, Airtel, Jio, Vodaphone idea, etc.) make it possible to spread usage of Smartphone everywhere. Also, there was a significant negative correlation between academic achievement and Smartphone addiction of college students. This observation is in tune with the similar observations done by Zhang & Zeng (2024), Choudhury & Tripathy (2018), Sunday et al. (2021), Achangwa et al. (2022), Jingqian GU (2024), Simon & Stijn (2020), Norazman & Mothar (2023), Ng Siew Foen (2017) and Alharbi et al. (2022). In continuation of this finding, it was also observed that, students belonging to low Smartphone addicted group sowed much better in academic subjects (Mean=87.30, SD=4.81) than highly (Mean=50.30, SD=10.48) and moderately (Mean=60.19, SD=9.42) addicted groups. Again, moderately addicted students' academic achievement is better in presence of the highly addicted students.The finding of the present study is supported by the study of Sunday et al. (2021) where it was investigated that greater the use of Smartphone, the greater the negative impact on learning and academic performance. It may be due to the fact that low Smartphone addicted students used Smartphone effectively in terms of convenient study aid, proper utilization of leisure time, access to vast information on different subject areas, making themselves familiar to digital system etc. But this finding is quite contrary with the study conducted by Wang et al. (2022) where it was revealed that, the students in the high Smartphone use group were outperformed than those who were in the low Smartphone use group. Again, it is also evident that addiction to Smartphone is associated with impaired cognitive function, sleep disturbances &

neurological problems (Achangwa et al. 2022), decreased social skills, vision problems and increased stress level that can lead to poor performance in memory and attention task. Ultimately it results in decrease in the academic performance. If students are intrinsically motivated, they would be able to use Smartphone in a positive way (Mukhdoomi et al. 2020).

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EVOLUTION OF EDUCATION: FROM THE ANCIENT GURUKUL SYSTEM TO THE DIGITAL ERA

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ABSTRACT

The present paper aims to explore the shifting paradigm of Indian education system from Gurukul to the modern classroom of digital age. It is going to present a chronicle of India's educational Odyssey. The transition has taken place from traditional models such as the Gurukul system to modern methods like classroom-based learning and more recently, to online and distance mode of education. Several Indian thinkers have contributed to the Indian education system by introducing fresh perspectives, alternative approaches, and practical solutions to address the diverse needs and challenges of education in India. These thinkers, among others, have left a lasting legacy on the Indian education system, influencing policies, pedagogical approaches, and the broader discourse on education in the country.

Keywords: Holistic and inclusive, personalized attention, commercial, death of distance, collaborative learning.

INTRODUCTION

Education plays a crucial role in the augmentation of the hidden potentialities and success of any individual, society, and Nation. It serves as a catalyst for social, economic, cultural and traditional transformation. A well-educated populace, equipped with relevant knowledge, aptitudes, and competencies, is indispensable for fostering both economic prosperity and social well-being. Furthermore, education serves as a potent tool for achieving social mobility and plays a pivotal role in building a fair and just society. Sri Aurobindo opines that the central aim of education is: "the building of the powers of the human mind and spirit; it is the formation or, as I would prefer to view it, the evoking of knowledge and will and of the power to use knowledge, character, culture..." (421). Mahatma Gandhi views education as a means to develop three H's - Hand, Heart, and Head. Rabindranath Tagore believes that "our education should be in full touch with our complete life, economical, intellectual aesthetic, social and spiritual; and our educational institutions should be in the very heart of our society, connected with it by the living bonds of varied cooperation. For the purpose of true education is to realize at every step how our

training and knowledge have organic connection with our surroundings. (1357)

Education System: A Paradigm Shift

The education system has undergone a transformative change in the post-Covid period. Global economic, innovative technological, and pedagogical currents are interweaving to produce paradigmatic changes that challenge many of the traditional practices and environments of educational institutions. The government of India has introduced the New Education Policy (NEP) 2020. It represents a comprehensive overhaul of the country's education system, aiming to address various challenges and align with contemporary needs. It advocates a more holistic and inclusive approach to education that values multilingualism, cultural diversity, critical thinking, creativity, and experiential learning. It recognizes the potential of distance and digital education to enhance access, equity, quality, and flexibility in our education system. It also promotes the integration of the Indian Knowledge System with modern-day curriculum and pedagogy.

The evolution of the Indian education system reflects a significant paradigmatic shift over time. The transition has taken place from traditional models such as the Gurukul system to modern system like classroom-based learning and, more recently, to online and distance mode of education. Several Indian thinkers have contributed to the Indian education system by introducing fresh perspectives, alternative approaches, and practical solutions to address the diverse needs and challenges of education in India like Swami Vivekananda, Sri Aurobindo, Rabindranath Tagore, Mahatma Gandhi, Sarvepalli Radhakrishnan, Jiddu Krishnamurti, Dharampal, J.L. Nehru and Sonam Wangchuk. These thinkers, among others, have left a lasting legacy on the Indian education system, influencing policies, pedagogical approaches, and the broader discourse on education in the country.

THE HISTORICAL PERSPECTIVE: FROM PAST TO PRESENT

The Gurukul / Ashram system (residential institution) was the traditional educational model in ancient India. The pupils lived with a guru (teacher) in a sequestered environment known as a Gurukul. The emphasis of education was on holistic development—the physical, mental, emotional, and spiritual growth of the students. It encompassed along with academic education, moral values, character development, community involvement, cultural promotion, and vocational skills. The guru played a central role in nurturing every aspect of the disciple's growth and development, both intellectually and spiritually. A wide range of subjects, including philosophy, literature, science, and the arts, were taught. The integration of science and the arts offered numerous benefits for students' all-round development, including fostering critical thinking, creativity, interdisciplinary connections,

emotional intelligence, cultural understanding, communication skills, and personal growth.

One of the defining features of the Gurukul system was the personalized attention given to every disciple. This close teacher-student relationship fostered individualized learning experiences and allowed the guru to provide personalized guidance, close mentorship, and support to each pupil. The guru mentored and monitored the special needs, abilities, and interests of each disciple. Lessons were personalized based on the disciple's learning style, pace, and level of understanding, ensuring that every learner received relevant and meaningful education.

The end of the Gurukul system in India coincided with significant changes in the country's educational landscape, particularly following the introduction of British colonial education policies. One pivotal moment was the implementation of Lord Thomas Babington Macaulay's Minute on Education in 1835, which laid the foundation for a new direction in Indian education system. The traditional indigenous systems were declined and transformed in the aftermath of Macaulay's Minute. The Minute advocated for the promotion of English-language, literature, and Western educational methods. It aims to create a class that would be Indian in blood and colour but English in tastes, opinions, morals, and intellect. These Indians educated through such education would be a help in the expansion and maintenance of empire. The British believed that English education would serve as a tool for spreading Western ideas, facilitating administrative efficiency, and assimilating Indians into British culture and governance. These institutions followed a structured curriculum, standardized examinations, and hierarchical teaching methods, in contrast to the more informal and decentralized nature of the Gurukul system. This system focused more on specialized academic subjects and professional careers, with less emphasis on holistic development, practical skills, and the diverse learning needs of students.

The intellectuals like Sri Aurobindo, Mahatma Gandhi, and Rabindranath Tagore condemned such European education, which is grossly commercial, materialistic, insufficient and utilitarian in nature. Sri Aurobindo opines that the teaching imparted through such a system is "denationalising, degrading and impoverishing to the national mind, soul and character because it is overshadowed by a foreign hand and foreign in aim, method, substance and spirit." (417) In response to Macaulay's recommendations, the British colonial government established modern schools, colleges, and universities across India. The legacy of these colonial-era reforms continues to shape the trajectory of education in India today as the country grapples with the ongoing tensions between Western educational models and indigenous educational philosophies.

In recent years, there has been a paradigmatic shift from classroom to screen room and from face to face mode to online and distance education modes, from blackboard to white board, from real to virtual, from chalk to chat driven by

advancements in technology and the increasing demand for accessible and flexible learning options. Such form of education is a panacea for most of the problems besetting the conventional educational system. The progress in the Information and Communication Technology (ICT) is the single most important factor in the growth of such kind of learning in recent years:

Technology offers a host of possibilities for connecting far-flung students with the classroom. It brings geographically disparate individuals together with instructors, allowing for a rich variety of educational resources and interactive materials. It enables those who live far from traditional institutions to take classes and gain access to various types of educational materials. (Darrell: Digital Schools, 83)

Online education platforms and distance learning institutions offer a wide range of courses and programs across various disciplines. These platforms uses digital technologies such as the internet, video conferencing, smartphones, apps like zoom, google meet, webex, podcast and multimedia resources to deliver educational content to students:

...Educational uses of digital technology encompass the use of internet-connected computing devices such as laptop and tablet computers and 'smart phones', as well as the institutional uses of these technologies in the form of virtual learning environments, electronic smartboards and so on. These technological devices are used throughout educational systems to support a diversity of forms of educational provision from kindergartens to work-based training. (Neil: Education, 18)

Online learning platforms provide interactive multimedia content, live lectures, discussion forums, and assessments accessible through the internet. The learners can access educational materials at any time and from anywhere, using computers, tablets, or smartphones and cloud computing. Digital education revolutionized the education system by reducing the physical restrictions and 'frictions' of the 'real' world and by 'death of distance', 'end of geography', and privileging 'virtual' arrangements over material arrangements. This mode of education offers flexibility, allowing learners to pace their studies according to their schedule and preferences. Additionally, online learning facilitates, collaborative learning experiences and enables access to resources and expertise from around the world.

Distance education, also known as distance learning or remote learning, refers to a mode of education where students and instructors are physically separated and interact through various forms of technology. In it the learning materials, resources, and communication tools are delivered to the students directly, allowing them to study at their own pace and from locations outside of traditional classroom settings. It offers flexibility in terms of time, location, and pace of learning. It allows

individuals to pursue education while balancing work, family, or other commitments, making it particularly attractive for adult learners and working professionals. It requires students to take more responsibility for their learning process. It enhances access to education for individuals who may face barriers to attending traditional on-campus classes, such as geographical distance, physical disabilities, or work commitments. It allows students to pursue education without the need to relocate or commute to a physical campus. It enables students to access a wide range of courses, programs, and educational resources from institutions around the world. This diversity of options allows students to pursue specialized interests, explore new fields, and access expertise that may not be available locally. It supports lifelong learning by providing opportunities for individuals to continue their education at any stage of life. Whether acquiring new skills for career advancement, pursuing personal interests, or engaging in professional development, distance education offers flexible learning pathways for lifelong learners. Overall, distance education is a valuable and increasingly popular mode of learning that expands access to education, promotes flexibility, and supports lifelong learning. Keegan's highlights some key points of distance education (1986): 1. The separation of the learner and the teacher, 2. The provision of student support services, 3. The use of technical media, 4. The provision of two- way communication, 5. The possibility for occasional meetings of learners. All these are attempts to establish linkages between the distance learner and the distance teaching institution and also among the learners themselves.

Distance education offers many benefits, but it also presents challenges such as maintaining motivation, staying connected with instructors and peers, and ensuring access to reliable technology and internet connectivity. Additionally, distance education may not be suitable for all learners, as it requires a degree of self-discipline, independence, and technological proficiency. While offering numerous benefits, it also presents several demerits to holistic development. This teaching and learning process places a strong emphasis on IQ (intelligence quotient) while neglecting other aspects of intelligence such as EQ (emotional quotient), SQ (social quotient), PQ (physical quotient), AQ (Adversity quotient), and CQ (creativity quotient). This focus on IQ can lead to several negative outcomes.

Technological-based education can accommodate large numbers of students than traditional classrooms. Mass communication is easy; personal communication is very difficult through this mode. It has left no space for personal touch, emotional support, or human connection in the teaching-learning process. The pedagogue can't see the responses and reactions of the learners. It lacks the social dynamics and sense of community found in traditional classrooms. The students and teachers are often physically separated by screens and devices, which can create a sense of isolation and detachment. Without face-to-face interaction, opportunities for personal connections and non-verbal communication may be limited. This can lead to a sense

of anonymity and impersonality, with students feeling like just another face in the crowd. Human interaction is crucial for emotional development as it allows individuals to learn empathy, communication skills, stress management, and conflict resolution. Emotional intelligence, such as understanding and managing emotions, requires real-life interactions and experiences that technology-mediated communication may not fully provide. While technology enables connections across distances, relying solely on virtual relationships and it can hinder the development of meaningful, in-person connections. Physical proximity and non-verbal cues play essential roles in understanding and responding to others' emotions. The world can be connected through the heart, not through the brain. Digital divide, technical glitches, internet connectivity issues, and software malfunctions can disrupt the flow of communication and learning in digital classrooms, creating frustration and hindering personal interaction between students and teachers.

Excessive screen time can lead to a sedentary lifestyle, limiting opportunities for outdoor activities and physical exercise that can have adverse effects on physical health, such as eye strain, disrupted sleep patterns, obesity, and musculoskeletal problems. Digital platforms offer endless sources of entertainment and information, making it easy for students to become distracted during learning activities. Constant distractions can disrupt concentration, leading to reduced academic performance and inhibiting the development of patience and focus.

Digital education may prioritize technical skills over traditional skills such as handwriting, drawing, and manual dexterity. In remote or online learning environments, students may experience feelings of isolation, alienation and lack of sense of belongingness to fellow students, teachers, to the department and university due to limited social interaction. Human connection is vital for emotional well-being and holistic development, and prolonged isolation can have detrimental effects on mental health.

Man is a social animal. Society is needed at every step to inculcate in him various understandings of life. The need for companionship, conversation, and interaction is fundamental to his well-being. Interaction with others provides emotional support and validation. When one shares, he is being cared for. Sharing thoughts, feelings, and experiences with others helps one feel understood, accepted, and connected. Engaging in conversation and spending time with others can reduce stress levels. Social interaction stimulates the release of oxytocin, a hormone that promotes feelings of relaxation and bonding, while also reducing levels of cortisol, the stress hormone. Conversing with others stimulates cognitive processes such as critical thinking, problem-solving, and creativity. Engaging in meaningful discussions and exchanging ideas can broaden perspectives and expand the knowledge base. Social interaction fosters a sense of belonging and promotes identity formation. Being part of a community or social group provides one with a

support network and a shared sense of purpose, which contributes to overall happiness and well-being. Regular interaction with others helps to develop and refine communication skills, including listening, speaking, and non-verbal communication. These skills are essential for building and maintaining relationships, both personally and professionally. Social interaction allows us to practice empathy, compassion, and understanding towards others' emotions. Developing emotional intelligence through social interactions enables us to navigate interpersonal relationships more effectively and build stronger connections with others. Social interaction is a fundamental aspect of human nature that contributes to emotional, cognitive and physical well-being. Cultivating meaningful relationships, participating in social activities, and connecting with others are essential practices for leading a fulfilling and balanced life.

CONCLUSION

Overall, the paradigmatic shift in the Indian education system from the Gurukul system to classroom-based learning, and subsequently to online and distance education modes, reflects the evolving needs and aspirations of learners in a rapidly changing world. Each educational model has its own unique strengths and challenges, and the integration of technology in education opens up new opportunities for innovation, accessibility, and lifelong learning. By adopting a more inclusive and balanced approach to education, the teachers can better prepare students for success in the digital age, fostering not only academic achievement but also personal growth, resilience, and well-being in all aspects of life.

To address these concerns, educators and policymakers should adopt a more holistic and inclusive approach to education that values and nurtures multiple intelligences, including EQ, SQ, and PQ, alongside IQ. Ultimately, the key lies in finding ways to integrate technology in education while preserving the personal touch and human connection that are essential for fostering meaningful learning experiences and nurturing students' holistic development. Sri Aurobindo's views on national education appropriately summarize the points that can be used in the conclusion of this paper: This is the aim and principle of a true national education—not, certainly, to ignore modern truth and knowledge, but to take our foundation on our own being, our own mind, our own spirit. (421)

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THE GEOMETRIC REASONING LEVELS: GENDER DIFFERENCES IN SOUTH 24 PARGANAS

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ABSTRACT
A country's progress and prosperity depend on the quality of mathematics taught in its school system. The development of the country is possible by ensuring equal opportunities for men and women. The purpose of the study was to investigate gender difference in the level of geometric reasoning. The sample consisted of 428 higher secondary students. The result yielded that only a very small percentage of boys 4.67% and girls 0.46% students could attain highest level 4 with respect to Van Hiele Levels. Further, a Chi-square test showed that Geometric reasoning level was not independent of gender. Male students generally achieve higher geometric reasoning levels than female students. In other words, it was observed that gender was a factor in geometric reasoning.

Keywords: Higher secondary, geometry thinking level, reasoning, gender;

INTRODUCTION
The Government of India gives importance to the learning and teaching of mathematics, science, engineering and technology in its school system because of the significant role which these subjects play in building the nation. Geometry is included as part of the West Bengal mathematics curriculum so that learners can have a wide range of options in choosing careers in mathematics, science, engineering and technology. Most poignant objectives of geometry learning are to develop visualization, critical thinking, intuition, perspective, problem solving, visual spatial abilities, logical reasoning, deductive reasoning and to improve proof skills. Geometric representation can also be used to help students understand other areas of mathematics: fractions and multiplication in arithmetic, relationship between graph of functions, and graphical representations of data in statistics. Research on spatial ability is also rife in the field of psychology (Bishop, 1983).

THEORETICAL BACKGROUND
Van Hiele Model
According to Alex & Mammen, (2016) the most popular established theory of students' level of geometric thinking is based on Van Hiele theory. The theory emerged in 1957 as a product of two mathematics teachers completing their doctoral

studies at the University of Utrecht in the Netherlands (Usiskin, 1982). The theory was developed by Pierre Marie Van Hiele and Dina Van Hiele Geldof (Armah, et al, 2018). Among the studies conducted on geometric thinking and the development of geometric thinking, Van Hiele's theory is the most important (Alex & Mammen, 2016; Armah, et al, 2018).This Van Hiele theory (1986) covers five sequentially and hierarchically thinking, listed as follows:

Level-0: Visualization: The student can merely recognize a shape.
Level-1: Analysis: The student is able to analyse a shape because he/she knows the properties of the shapes in Level 1.
Level-2: Abstraction: The students have learned geometric properties after having attained the first two levels.
Level-3: Deduction: The student is able to construct proofs of geometric properties after having attained the first three levels.
Level-4: Rigor: The student is able to understand the implications of non-Euclidian geometry after having attained the first four levels (Crowley, 1987). Rigor is ascending order of difficulty.

Originally, Van Hiele ranged from level 0 to level 4. Van Hiele explains model geometric thinking using three aspects: the existence of layers, properties of layers, and movement from one level to the next. Currently in the world, there are two basic lines of research based on Van Hiele theory: one is converting Van Hiele theory to other field of mathematics (Boolean Algebra, Functional-Analysis-Calculus), and another is using dynamical geometry to achieve higher Van Hiele theory (De Villiers, 2010).

LITERATURE REVIEW

Gender difference in Mathematics

Gender differences in performance in mathematics have been developing interest of the researchers around the World (Doris, O'Neill & Sweetman, 2013). Notable research studies have proved that gender difference in mathematics learning are not evident in the elementary school years but the females begin to fall behind males at the intermediate level (Mann, Sasanuma, Sakum and Masaki, 1990). Females fall further behind during the high school years (Leder, 1985). The results of many studies have shown that gender differences in mathematics are diverse. Forgasiz (2005) asserts that gender should be a concern in mathematics education because of its importance. He also argued that it is significant to include gender as a variable in research study analysis, even if it is not the main focus of studies on mathematics education. Furthermore, Armstrong (1981), Lloyd, Walsh, and Yailagh (2005) emphasizes that gender is an important factor in learning mathematics that

Halat (2008) cites. This argument has motivated researchers to evaluate this variable. As cited by Halat (2008), research work by the following researchers (Grossman & Grossman 1994) has shown that there are differences in the achievement of male and female students in various content areas of mathematics such as calculation, measurement, problem solving and spatial visualization.

A study by Armstrong found that female students performed better than their male counterparts in computation and spatial visualization. Also, literature elsewhere indicates that female students perform better than their male counterparts (Arnot, David & Weiner 1999). Ezeh (2005) reported that when senior secondary school students were tested in sequence and series, male students lagged behind their female peers. Females tend to do better in mathematics and there are no significant gender differences in understanding mathematics concepts.

According to Fox and Cohn (1980), male students performed better than their female peers when they both took scholastic aptitude tests at the high school level. Also, Smith and Walker (1988) found significant sex-related differences for male students in geometry at the tenth-grade level. Randhawa (1994) found that males outperformed females in mathematics during the high school years. Following researchers conducted by (Fennema, 2000; Kaiser-Messmer, 1994) found that male students performed better than girls in mathematics. Similarly, research on standardized mathematics tests by (Fox, Brody & Tobin, 1980) cited by Asante (2010) found that male students generally scored higher than their female counterparts.

According to Halat (2006), there was no statistical difference between male and female students in their geometric level acquisition when VHGT was employed for data collection. Again, Halat (2008) concluded that when the VHGT was used, he did not find a statistical difference between the level and mean of geometric reasoning between male and female students. Also, Arhim and Offoe (2015), concluded that there was no gender difference between males and females in senior high school form one when tested on their problem-solving ability. Armstrong (1981) reiterated his opinion that there was no statistical difference between boys and girls in achievement in the sixth grade when their skills were tested in applied measurement, applied geometry, and statistics and probability.

PURPOSE OF THE STUDY

The purpose of this study was to investigate gender differences in the level of geometric reasoning of higher secondary students using the Van Hiele's theory of geometry thinking level in south 24 parganas district.

RESEARCH HYPOTHESIS

H0: There is no significant difference in Van Hiele thinking levels among male and female higher secondary students.

RESEARCH QUESTION

What Van level of geometric reasoning do male and female higher secondary students reach and are there any difference between male and female?

METHODOLOGY

Research Design

Survey method was used to investigate gender differences at the Van Hiele geometric reasoning level.

Tool used

The tool used for the study was the Van Hiele Geometry Test constructed by Usiskin (Usiskin, 1982). The test consisted of multiplechoice questions, with five questions pertaining to each of the five Van Hiele levels. Each question displayed five options, one correct answer and four distracters. A level is achieved if and only if 3 or more than 3 out of five questions are answered correctly. A participant may be assigned a Van Hiele Level subsequent to his/her achieving all the levels prior to it as well as the assigned level. Each participant may be assigned Levels from 0 to 4, 0 being the lowest level and 4 being the highest. The Forced Van Hiele Level, also developed by Usiskin (Usiskin, 1982), assigns levels from 0 to 4, and in the process manages to include all participants. Thus, the Forced Van Hiele levels were assigned to the participants for the purposes of this study. The Cronbach Alpha coefficient for reliability of the test ranged from .69 to .79.

Population and Sample

The sample consisted of 428 Class XI students – 267 males and 161 females from 12 schools in the district of South 24 Parganas in West Bengal. Two Sub-divisions from South 24 Parganas district were randomly selected. Two Blocks from each of the sub-divisions were randomly selected. Three schools were randomly selected from each of the Blocks. Thus, multi-stage random sampling was adopted to select the sample for the present study.

Table 1. The sample

Level	Boys	Girls	Total
0	53	66	119
1	99	61	160
2	50	19	69
3	45	13	58
4	20	02	22

FINDINGS

The sample was administered and the Van Hiele test and the responses were tabulated accordingly.

The percentage of students who achieved the different Van Hiele levels is shown below. Those who achieved a higher level had also achieved the lower level/s prior to it. The percentage of students in Level 0 includes those who had not achieved the higher levels as well as those who achieved the higher levels. The percentage of students who achieved Level 1 include those who could go no further as well as those who achieved Level 1, 2, 3 and 4.

Table-2. Percentage of students who achieved the different levels

Level	Percentage	Boys(%)	Girls(%)
Level 0	100	44.53	55.46
Level 1	72.19	50.00	22.19
Level 2	34.81	26.86	07.94
Level 3	18.69	15.18	03.50
Level 4	05.14	04.67	00.46

The result shows that while 44.53 boys % and girls 55.46% of the total sample achieved Level 0, only boys 4.67% and girls 0.46 % of the total sample achieved Level 4. Each participant was subsequently assigned a Van Hiele Level based on his/her highest achieved level. The result pertaining to this is shown below:

Table-3. Assigned Van Hiele Levels (VHL):

Level		Boys	Girls	Total
VHL0	Count	53	66	119
	% within Gender	19.9	41.0	27.80
VHL1	Count	99	61	160
	% within Gender	37.1	37.9	75
VHL2	Count	50	19	69
	% within Gender	18.7	11.8	26.8
VHL3	Count	45	13	58
	% within Gender	16.9	8.1	25
VHL4	Count	20	0.2	22
	% within Gender	7.5	1.2	8.7
Total	Count	267	161	428
	% within Gender	100	100	100

The above Table-3 shows that

- The modal Van Hiele level is Level 1 for boys.
- The modal Van Hiele level is Level 0 for girls.
- Many achieved high Van Hiele Levels.
- Few students have achieved Van Hiele Level 4.
- Less percent of girls achieved high Van Hiele Levels.

To find out whether the van Hiele levels are dependent on gender, a Chi sqare test was carried out.The null hypothesis for this was
H0: There is no significant difference in Van Hiele thinking levels among male and female higher secondary students.

The result of the Chi Square test is as follows: The data was analysed using SPSS -23. The inferential statistics of the male female result of the independent samples Chi-Square test. The result of the Chi-Square test as ($\chi(4)= 32.496$, $p=0.000<0.01$). The degree of freedom 4, and N of valid cases =428. Here the Chi-Square value of 32.496 is highly significant at 1% level. Therefore, the H0 may be rejected. Thus, the Van Hiele geometric reasoning levels are not independent of gender. Rectangular array 3 shows, boys tend to overtake girls inthe higher van Hiele levels.

CONCLUSION

The purpose of the study was to investigate male and female higher secondary students Van Hiele Levels of geometric reasoning using Van Hiele level of geometric thinking in south 24 Parganas district of West Bengal. It also sorts to find out the score of gender differences among higher secondary students Van Hiele geometric reasoning level using Van Hiele level of geometric thinking.

Four hundred twenty-eight higher secondary students were used for the study as sample from South 24 district. From the results, only a few students have achieved

Van Hiele Level 4. The modal Van Hiele level is Level 1 for boys. The modal Van Hiele level is Level 0 for girls. The study revealed that there was statistically significant difference in the levels between the male and female higher secondary students in geometric reasoning specifically Van Hiele level of geometric thinking.
Many literatures have consistently reported that males perform better in problem solving than females among high ability students on standardized mathematics tests (Zhu, 2007). These gender differences are usually evident in high school and college and vary across mathematical tasks. Gender differences in mathematical problem solving are not biologically determined but are likely influenced by the combined effects that have biological, psychological and environmental origins, promising us that education can play a great role in elimination or reducing gender differences in mathematical problem solving. On the one hand, educators need to think about how to use appropriate instruction to help all female and male students to develop problem solving-skills. Teachers, on the other hand, need to critically consider the positive and negative effects of classroom variables and make conscious efforts to promote gender equality in mathematics education.

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FOCUS ON ETHICAL VALUES IN ACADEMIC DISCIPLINE: INDIAN GREAT THINKERS, INDIAN EDUCATION COMMISSIONS AND NEP-2020

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ABSTRACT

The purpose of education cannot be, even at its best, to merely create a literate individual, or a highly informed person, or to prepare an individual to find a job, or to create a good worker, a skilled technician, a scientist, or to make an efficient doctor or lawyer, or to produce a capable industrialist or politician, or even to create a good and law abiding citizen. Therefore, the great Indian Educationists, various Education Commissions of India and especially the latest Education Policy (NEP-2020) stress to inculcate Universal human values and ethics right from the beginning of one's life.

KEYWORDS: Constitution, National Education Policy, Values, Ethics, Harmony, Integral Education, Human Rights, Literacy, Social Evils

INTRODUCTION

In every modern house there is now a whisper: There must be more money / There must be more money / Money, money, money / Brighter than sunshine and sweeter than honey. In the present circumstance, almost every one of this so-called educated society is busy to topple others in the race. All are driven by money, power and sex – no matter whether the human ethics and values are trampled down or not. This state of affairs cannot be allowed to go unbridled in this holy land of unique culture.

The complexities and problems of life of people have been widening day by day along with their increasing intensities. Surely, to come out of the present day evils seems to be not a very easy task. Positive ideas for eradicating social evils on the one hand and developing value-based ideas on the other, can only be made effective if one and all take up the matter seriously and sincerely and put efforts right from the early childhood education. Otherwise, erosion of human values and the magnitude of the social and ethical problems causing crisis in humanity will assume a devastating and serious threat to the mankind in near future.

It is for these reasons, most of the great minds of India have advocated for the introduction of value ridden education in all strata of formal and informal education.

In addition to them, various commissions and committees have been evolved to address the question of values in education system of India. Recently NEP-2020 has also given emphasis upon the moral and value-based education to ensure the attainment of true education and mental well-being of all citizens of the Country.

GREAT THINKERS OF INDIA

In pursuance of the proposition stated above, the leading thoughts of the great thinkers of India on the relevant subject may be introduced for eradicating social evils or erosion of values. Education should play a very important role in forming the future of mankind.

- Swami Vivekananda: Acquisition of informationis not enough for education. Education is a man-making, life-building, character-making process. It should unfold the hidden powers in man. Swamiji defined Education as - "Education is the manifestation of perfection already in man". According to Swami Vivekananda, education means the exposition of man's complete individuality.
- Sri Aurobindo: Now in the present set of circumstances, it occurs to us that the complexities and problems of life of people have been widening with multiplying effects day by day along with their increasing intensities and dimensions. Surely, to come out of the present day evils is not a very easy task for which Sri Aurobindo has said: "It is not our contention that the actual system of ancient instruction should be restored in its outward features, - a demand often made by fervid lovers of the past. Many of them are not suited to modern requirements. But its fundamental principles are for all time and its discipline can only be replaced by the discovery of a still more effective discipline, such as European education does not offer us."
- Rabindranath Tagore: The highest education is that which does not merely give us information but makes our life in harmony with all existence. In Tagore's words: "Education means to find out that the ultimate truth which emancipates us from the bondage of the dust and gives us the wealth, not of things but of inner light, not of power but of love, making the truth its own and giving expression to it".
- M. C. Gandhi: People want to provide only such education as would enable the student to earn more money, they hardly give any thought for improvement of character of the educated. This feeling finds a vent in Gandhiji's words: "By education I mean an all-round drawing out of the best in the child and man – body, mind & spirit".
- Dr. S. Radhakrishnan: The goal should be towards commitment to knowledge and fostering of a strong relationship between the teachers and the students. He aptly opined, "Unless we have dedicated and committed teachers to take to teaching as a mission in their lives, a good educational system cannot be developed".

VARIOUS COMMISSIONS AND COMMITTEES

Various Commissions and Committees on education have furnished reports since 1949 successively to the Union Ministry of Educationor Ministry of Human Resource Development for inculcating Universal human values of truth, peace, love, cooperation and those values emanating from our Constitution such as patriotism and democratic decision-making. With this background, the National Policy on Education (NPE) was approved by the Parliament in May, 1986 and the Programme of Action (POA) for its implementation in August, 1986. The National Policy on Education emphasised on value education for cultivation of social and moral values. The values (moral and social values 84, NCERT) are in conformity with the fundamental duties of an Indian citizen enshrined in Article 51A of the Indian Constitution, which affirms, adopts and enacts Human Rights proclaimed by the General Assembly of the United Nations on December 10, 1948 under "Universal Declaration of Human Rights". In spite of this, it is unfortunate that the Education Departments of the Government of India and State Governments are still lagging behind evolving and adopting specific curricula for the same. The importance to imbibe ethics and values in the Indian Education System has been reflected throughout the various education commissions as follows:

- Radhakrishnan Commission (1948): "If we exclude spiritual training in our institutions we would be untrue to our whole historical development."
- Secondary Education Commission (1953): "... moral instruction should be given in schools."
- Kothari Commission (1964-66): "Indian should strive to bring science and the values of the spirit together and in harmony" & "... Knowledge with the lack of essential values may be dangerous".
- 5th Five-Year Plan (1974-79): "Perhaps the most significant need of the hour is to transform the education system with a view to cultivating the basic values of humanism."
- National Policy on Education (1986): "The growing concern over the erosion of essential values in society has brought to focus the need for readjustments in the curriculum in order to make education a forceful tool for the cultivation of social and moral values."
- Programme of Action (1992): The framework emphasized value education as an integral part of school curriculum.
- 11th Five-Year Plan (2007-2012): The importance of value education is realized in contemporary times to strengthen the secular, democratic, non-discriminatory and scientific spirit among youth.
- National Education Policy (2020): For the purpose of developing holistic individuals, it is essential that an identified set of skills and values will be incorporated at each stage of learning, from pre-school to higher education.

EMPHASIS ON ETHICS & VALUES IN NATIONAL EDUCATION POLICY (NEP) - 2020

The National Education Policy, 2020 (henceforth NEP-2020) speaks for ethical values such as respect, empathy integrity in the true sense of the term and responsibility among the students at large by dint of variety of educational programmes. NEP-2020 states for the significance of imbibing fundamental values through whole academic discipline. To make it in reality the role of the teachers is very great and they must be at the centre of the fundamental reforms in the education system.

NEP-2020 aims to address the many growing developmental imperatives of our country while building upon India's traditions and value systems. The rich heritage of ancient Indian knowledge and thought has been a guiding light for this Policy. It further declares that the pursuit of Knowledge (Jñāna), Wisdom (Prajñā) and Truth (Satya) were always considered in Indian thought and philosophy as the highest human goal. This Policy promulgates for the Holistic Development of learners stating that the aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individual. It further promotes the lines of the Indian great educationists that since knowledge is a deep-seated treasure, education helps in its manifestation as the perfection which is already within an individual. Thus this National Education Policy advocates that "Knowledge of India" will include knowledge from ancient India and its contributions to modern India.

The Policy has given emphasis on inculcating ethical values among the students not only for the development of their personality but also for the positive marching of the society. The NEP-2020 promulgates for a number of steps to be taken to ensure these ethical values.

NECESSITY FOR ETHICS & VALUES

It is worthy to be mentioned here at this juncture of human existence that what the future is demanding before the brute compares, either in the materialistic world or in the human behaviour; probably is a life of integrity, a social human being, capable of thinking rationally, feeling like a man, expressing like a thinking animal, approaching like a most developed creature of the Universe. But in reality the uncertainty demands, malpractices reign supreme and ingenuity prevails at every footprint of our life. To combat from the shackles and the proximity of the complexity and incomparable consumerism along with alluring challenges of the modern days, the students are to be equipped advancing with the comprehensive nourishment of all the inner layers of humanity, sufficient to bear the identity of manhood through the integral growth and mastery over himself by dint of ethical values, so that they will be able to lead the society ahead through contributing to the genuine and sure progress of the equitable society.

CONCLUSION

An inner change must precede the outer if it must be lasting and meaningful. An integral education is the key to this inner change on a larger collective basis; it is the key to true progress of the World and a better future for mankind. One must therefore understand education in its widest and deepest sense. Education is meant to bring out the best in Man, to develop his potentialities to the maximum, to integrate himself with his own inner self, his surroundings, his society, his country and humanity to make him the "complete man", the "integrated man". In Sri Aurobindo's words : "That alone will be a true and living education which helps to bring out to full advantage, makes ready for the full purpose and scope of human life all that is in the individual man, and which at the same time helps him to enter into his right relation with the life, mind and soul of the people to which he belongs and with that great total life, mind and soul of humanity of which he himself is a unit and his people or nation a living, a separate yet inseparable member".

If this is the meaning of education, then what passes in its name today in our educational institutions - is obviously very far from the yardstick mark. Would we not like our children to be truthful, courageous, generous and benevolent? The purpose of education cannot be, even at its best, to merely create a literate individual, or a highly informed person crammed with information and facts, or to prepare an individual to find a job, or to create a good worker, a skilled technician and scientist, or an efficient doctor or lawyer, or a capable industrialist or a politician, even to create a good and law abiding citizen. These may be needed but they are not the 'be all and end all' in themselves. Education in its true sense takes into account even more important aspects of the individuals - their characters, their personalities and their value-systems. Only when their academic qualifications or professional efficiencies are named with the sense of humanity and impulse of integrity, stamped with comprehensive value-system, the education we are aiming at, will take up most of the business of the facets of the multifarious problems of our lives surely.

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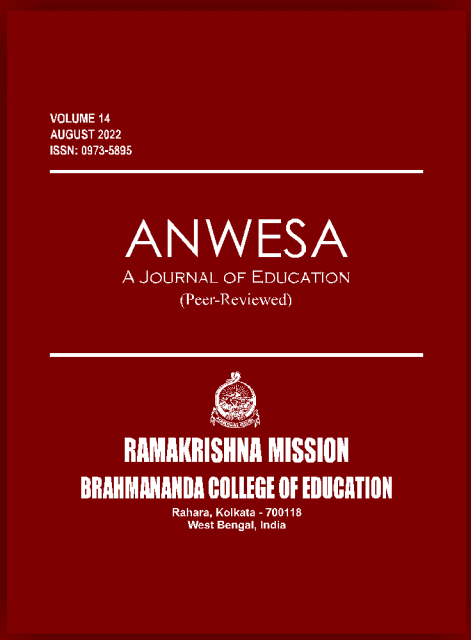

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SCHOLASTIC ACHIEVEMENT IN RELATION TO THE SELF-EFFICACY OF POST GRADUATE STUDENTS IN WEST BENGAL

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ABSTRACT

The study explores how scholastic achievement test among Post Graduate students in West Bengal is related to their self-efficacy. 110 Post Graduate students – both boys and girls, from Barasat, West Bengal, represent the sample of the present study. The 'Self-Efficacy Scale' by Singh and Narin (2014) was used in this study. The SPSS software version 20.0 was used to analyze the collected data. The study finding indicates a positive correlation between Post Graduate students' self-efficacy and their scholastic achievement. The findings additionally highlighted that students with high levels of self-efficacy do better than students with low levels of self-efficacy.

Keywords: Scholastic Achievement, Self-Efficacy, Post Graduate Students

INTRODUCTION

In Modern era scholastic achievements performs a vital role in each and every individual's development as well as Nation. According to C.V. Good (1959), "Scholastic achievement is the knowledge attained or skills developed in the school subjects usually designed by test scores or marks assigned by the teacher." There are many factors that have an impact on scholastic achievement such as individual concept, socio-economic background, teaching strategies, teachers' conduct, study habit, educational qualification of parents, occupation of parents, meta cognitive skills intelligence, attention and interest, perception and sensation.

Scholastic achievement significantly influences a student's future. Students who perform well academically have a better chance of adjusting to adulthood and gaining success professionally and financially. Moreover, it has been noted that people with higher academic performance have achieved prominent positions in society.

A person's self-efficacy is the belief in their capacity to accomplish a goal, take control over their own drives, conduct, and social circumstances. People's feelings, thoughts, motivations, and behaviors are all determined by their self-efficacy beliefs. Albert Bandura (1977a) first coined the phrase 'self-efficacy' almost

40 years ago. According to Bandura (1977, 1986, and 1997), "Self-efficacy is an individual's believe in his or her capacity to execute necessarily to produce specific performance attainment." Covingtonton (1984) specified self-efficacy as "the ability to perceive and value one's own self-worth which often comes depending upon the ability to achieve academic excellence competitively." Margolis & McCabe (2006) stated, "Students with a strong sense of efficacy are more likely to challenge themselves with difficult tasks and be intrinsically motivated. These students will put forth a high degree of effort in order to meet their commitments, and attribute failure to things which are in their control, rather than blaming external factors." Self-efficacy is significant as it determines our behavior and how we deal with the outside environment. We become less likely to try something if we doubt our capacity to do it. On the other hand, if we have a high sense of self-efficacy, we're more likely to take on new challenges and persevere in spite of failures. We are more driven to accomplish our goals when we believe in our capacity and self-confidence.

LITERATURE REVIEW

Large numbers of study were conducted regarding scholastic achievement and self-efficacy of different level of students. Meher et al. (2022), Mehmood (2019), Kolo & Ahamed (2017), Hwang (2016) and Meral & Colak (2012) noticed a strong connection between students' self-efficacy and academic success.They also recommended that Pupils have to be exposed to this type of self-efficacy intervention program so that they may develop the confidence to feel like they are able to do well and perform all academically associated tasks effectively, which in turn enhances their academic success. Sharma (2022) and Meera et al. (2015) observed that while there was no significant difference between boy and girl students or between Govt. and Govt.-aided students in their academic success, but there was a significant difference between rural and urban students in terms of their academic success in English and self-efficacy. Hasan and Parvez (2019) found that self-efficacy has no significant effect on academic performance but gender and locality have a significant impact on academic achievement of secondary school students. Beri (2019) found few notable variations in students' academic self-efficacy depending on factors such as gender, locality and type of school management. Additionally, brilliant learners showed highest level of self-efficacy in their studies. Ahuja (2016) in his study entitled 'A Study of Self-Efficacy among Secondary School Students in relation to Educational Aspiration and Academic Achievement', noticed a positive & statistically significant association between 'self-efficacy and emotional aspiration', 'self-efficacy and academic achievement' and 'educational aspiration and academic achievement' among high school learners. Sreenivasulu (2015) in his study 'Academic Achievement in Relation to Self-Efficacy and Gender among Tribal High School Students' reported a strong connection between self-efficacy and gender

depending upon the academic performance of tribal students. Pupils with high self-efficacy and girls performed better academically than pupils with low self-efficacy and even boys. Agarwal & Pavani (2015) concluded that "students who has higher levels of self-efficacy posses' higher academic achievement." This findingis also supported by Fakhru (2021), Koseoglu (2015), and Ahmad & Safaria (2013).

The analysis of review of related literature reveals that various researches have been conducted on self-efficacy and scholastic achievement. It also indicates that several variables have been thoroughly studied. But none of the investigators' study inquired about the effects of self-efficacy on postgraduate students' scholastic progress. Therefore, this study would be helpful to scholars, educators and developers, and it appears to be both required and adequately well-founded.

OBJECTIVES

- To study the difference of self-efficacy in relation to Gender of Post-Graduate students.
- To study the difference of self-efficacy in relation to Locality of Post-Graduate students.
- To study the difference of self-efficacy in relation to Subject stream of Post-Graduate students.
- To study the difference of self-efficacy in relation to Caste category of Post Graduate students.
- To find out the relationship between self - efficacy and scholastic achievement of Post Graduate students.

HYPOTHESES

H01. There is no significant difference between Male and Female students on their level of self-efficacy.

H02. There is no significant difference between Rural and Urban students on their level of self-efficacy.

H03. There is no significant difference between Arts and Science students on their level of self-efficacy.

H04. There is no significant difference between Reserved and Unreserved students on their level of self-efficacy.

H05. There is no significant relationship between self-efficacy and scholastic achievement of Post Graduate students.

DELIMITATIONS

- The study is confined to 110 Post Graduate students of West Bengal State University (WBSU), West Bengal.
- This study was only delimited of the 2nd & 4th Semester students.
- This study delimited to two streams viz. Arts and Science.

METHODOLOGY

For the present study, a descriptive survey method was employed. It is quantitative in nature, some null hypotheses (Ho) were formulated on the basis of the research objectives. Descriptive research is concerned with the formulation and testing of hypotheses, the analysis of the relationship between manipulated and non-manipulated variables, and arriving at certain generalizations.

Variables: The researcher has used following variables in this study:

- ***Independent Variable:*** Self-efficacy
- ***Dependent Variable:*** Scholastic Achievement
- ***Classificatory Variables:*** Gender, Locality, Caste category and subject stream of the students.

Population: The populations selected for the present study were all the students of West Bengal (Post Graduation).

Sample and Sampling Technique: In the present study, the researcher selected the West Bengal State University of North 24 Parganas district from the above-mentioned population by using a simple random sampling technique. The current study included a total of 110 students. It was comprised of students pursuing Post Graduation studies at West Bengal State University under the Arts or Science stream.

Tools and Techniques

- The 'Self-efficacy Scale' by Singh and Narain (2014) was used in the study. The scale consists of 20 items. Against each statement, five (5) options are there, such as Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree. It consists of four dimensions, and items are characterized as positive and negative. The test-retest reliability was found to be 0.82, and the spill-half reliability was found to be 0.74. The concurrent validity was found to be 0.92.
- The pupils' marks from the previous semester were considered as a measure of their academic success.

Statistical Techniques: With the study's objectives and design in mind, descriptive, co-relational, and inferential statistics were employed to analyze the data. For each variable, the mean and SD were calculated. The coefficients of correlation were determined to ascertain the connection among the study's variables. To assess the significance of differences between the study's variables, the t-test was performed.

Data Collection Procedure : Responses have been collected through the survey method with the help of a Google Form with 20 closed-ended questions. Google Form has been circulated to the randomly selected departments of West Bengal State University with proper permission from the administrator. 110 Post Graduate students studying in various departments at West Bengal State University have spontaneously responded through a Google form. Adequate time has been provided to the respondents to think carefully about the feedback, and the items have been clearly explained as needed.

DATA ANALYSIS AND INTERPRETATION

Data analysis was done using SPSS software, version 20.0.

● ***Analysis of Objective 1:*** To study the difference of self-efficacy in relation to Gender of Post Graduate students.

H01: **There is no significant difference between Male and Female students on their level of self-efficacy.**

Table No.1: Difference between male and female students on their level of self-efficacy.

Gender	*N*	*Mean*	*S. D*	*Calculated 't' value*	*'P' value*	*Remarks*
Male	46	77.50	7.420	1.792	.076	NS
Female	64	75.03	6.912			

The 'p' value was 0.076 which was higher than 0.05, hence the null hypothesis was not rejected at 0.05 level of significance. As a result, we could say that there was no significant difference between male and female students on their level of self-efficacy. In other words, we can say gender have no significant effect on student's level of self-efficacy.

● Analysis of Objective 2: To study the difference of self-efficacy in relation to Locality of Post Graduate students.

H02. **There is no significant difference between Rural and Urban students on their level of self-efficacy.**

Table No. 2: Difference between rural and urban students on their level of self-efficacy.

Locality	*N*	*Mean*	*S. D*	*Calculated 't' value*	*'P' value*	*Remarks*
Rural	78	75.15	7.508	2.101	038	Sig.
Urban		32	78.28	5.926		

The 'p' value was 0.038 which was lesser than 0.05, hence the null hypothesis was rejected at 0.05 level of significance. Therefore, we could say that there was significant difference between rural and urban students on their level of self-efficacy. In other words, we can say locality plays as significant role in their level of self-efficacy.

● Analysis of Objective 3: To study the difference of self-efficacy in relation to Subject stream of Post Graduate students.

H03. **There is no significant difference between Arts and Science students on their level of self-efficacy.**

Table No. 3: Difference between Arts and Science students on their level of self-efficacy.

Subject stream	*N*	*Mean*	*S. D*	*Calculated 't' value*	*'p' value*	*Remarks*
Arts	81	75.60	7.076	1.118	0.266	NS
Science	29	77.34	7.513			

The 'p' value was 0.266 which was higher than 0.05, hence the null hypothesis was accepted at 0.05 level of significance. As a result, we could say that there was no significant difference between Arts and Science students on their level of self-efficacy. Conversely, we can say subject stream have no significant effect on student's level of self-efficacy.

● **Analysis of Objective 4:** To study the difference of self-efficacy in relation to Caste category of Post Graduate students.

H04. There is no significant difference between Reserved and Unreserved students on their level of self-efficacy.

Table No. 4: Difference between reserved and unreserved students on their level of self-efficacy.

Caste category	*N*	*Mean*	*S. D*	*Calculated 't' value*	*'p' value*	*Remarks*
Reserved	77	75.58	7.663	1.067	288	NS
Unreserved	33	77.18	5.940			

The 'p' value was 0.288 which was higher than 0.05, hence the null hypothesis was not rejected at 0.05 level of significance. Therefore, we could say that there was no significant difference between reserved and unreserved students on their level of self-efficacy. In other words, we can say caste category does not play asignificant role in their level of self-efficacy.

● **Analysis of Objective 5:** To find out the relationship between self-efficacy and scholastic achievement of Post Graduate students.

H05. **There is no significant relationship between self-efficacy and scholastic achievement of Post Graduate students.**

Table No. 5 : Relationship between self-efficacy and scholastic achievement of Post Graduate students.

Variable	*N*	*R*	*Significance*
Self-efficacy & Scholastic achievement	*110*	*.976*	*Sig.*

It is evident that r = (0.976) value is significant. Hence, null hypothesis (H0) is rejected and an alternative hypothesis is accepted. In other words, the self-efficacy and scholastic achievement of post graduate students were determined to be positively related. There exists highly positive relationship.

DISCUSSION AND CONCLUSION

The researcher found that there was no significant difference between male and female students on their level of self-efficacy which is quite similar to the work of Ojha (2019) and Meera & Jumuna (2015). So, we can say that gender does not play any significant role in students' level of self-efficacy. The researcher also revealed a significant difference in self-efficacy levels between rural and urban students. This result also supports the previous studies of Sharma (2022), and Hasan (2019). So, we can say that locality has a significant role in students' level of self-efficacy. The

researcher also reported that there was no significant difference between Arts and Science students on their level of self-efficacy. Meher et al. (2022) have explored similar incidents to this research. So, we can say subject stream have no significant effect on students' level of self-efficacy. It is also found that there was no significant difference between reserved and unreserved students in their level of self-efficacy. So, we can say the caste category does not play any significant role in students' level of self-efficacy. The researcher identified a highly positive connection between self-efficacy and scholastic achievement among postgraduate students. This finding also is supported by the previous studies of Meher et al. (2022), Fakhru (2021), Ayane (2020), Mehmood (2019), Kolo & Ahamed (2017), Ahuja (2016), Hwang (2016), Goulao (2014), Motalgh et al. (2011) and Meral & Colak (2012). The Result of the research showed that students who have high levels of self-efficacy possess higher scholastic achievement than students with low levels self-efficacy. This finding is also supported by the previous studies of Agarwal & Pavani (2015), Fakhru (2021), Koseoglu (2015), and Ahmad & Safaria (2013).

From the results of the study, we can conclude that the self-efficacy scores of Post Graduate students differ significantly in terms of locality, but there exists no significant difference in terms of gender, subject stream and caste category. We can also conclude Students' self-efficacy and scholastic achievement positively related. Student who has high self-efficacy possess high scholastic achievement. Teachers and parents should be aware of their role in developing students' self-efficacy, which can help them do better in academics.

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SAVITRIBAI PHULE: LIGHTING THE IDEOLOGY OF EDUCATION AND HER CONTRIBUTION IN RELEVANCE TO NEP 2020

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ABSTRACT

Savitribai Phule was a renowned Indian educator and social reformer who made significant contributions to society and education in the middle of the nineteenth century. She placed a strong emphasis on women's empowerment and education for everybody. Because she started a wave of revolution in numerous parts of education, her thoughts and principles had to be infused into present-day education. She made an effort to undermine society's traditional educational structure and aimed to rebuild it as a free and inclusive system for all. Like Savitribai Phule, India's first education policy of the 21st century aims to address many growing developments and revamp educational aspects. The NEP 2020 is a significant policy document laying out the national-level strategy for the new millennium. The study is a wholly qualitative strategy related to content analysis, and both primary and secondary data sources are used. Savitribai's beliefs are compatible with the general education system. These ideas ought to be applied to the current educational system. The knowledge of the Indian educational system would be enhanced by this. Teachers and students will follow Savitribai Phule's lead in ensuring that the educational system is acceptable to all social classes and that everyone is aware of how to overcome prejudice. By doing this, current education will be more successful and contribute to maintaining its value and relevance at all levels. The objective of the present study is to lighting illuminate Savitribai Phule's ideology & her contribution to the new education policy of 2020.

Keywords: Ideology, Superstition, Relevance and National Education Policy.

"Education is the most powerful weapon which you can use to change the world."

- Nelson Mandela

INTRODUCTION

Education is the source of enlightenment, and it is the basis of changes in emerging society. Keeping in view the need for education, Indian thinkers and scholars emphasized making education universally accessible. Savitribai Phule also

made a lasting impact on India's social and educational history. She worked for social justice as well as gender equality (Sengupta, 2023). The National Education Policy also places particular emphasis on the development of the creative potential of each individual. Savitribai Phule was a crusader, meliorist, and pioneer in India's modern feminist movement. She is well known for being India's first female teacher and for her work to advance women and members of the untouchable community in the fields of education and literacy. She relentlessly tried to advance the downtrodden and undermine the prevailing caste structure (Maity, 2016).

The National Education Policy is based on the principle that education must develop not only cognitive abilities but also fundamental capacities and higher-order cognitive capacities such as critical thinking and problem-solving. She spoke out vehemently against the limitations placed on women that contributed to their subjugation. Her commitment to secular education for social liberation in India is a manifestation of her strong character (Biswas & Bhattacharyya, 2022). By getting to know her better and comprehending her hardships, we would be able to examine a life that not only transformed Indian education but also educated mankind to its true nature. Alongside B. R. Ambedkar and Annabhau Sathe, she is recognized as a key figure in Maharashtra's social reform movement and a representation of the Dalit Mang caste. She aggressively sought to remove caste and gender-based discrimination and spoke against untouchability (Das & Das, 2021).

One of the most significant individuals who made a significant contribution to elevating the purpose of the contemporary Indian social scene was Savitribai Phule. She was the first female educator and instructor, inspiring the oppressed to pursue education and therefore significantly contributing to their freedom. Her thoughts and activities are observed in the present educational field to a large extent, which is strongly emphasized by Savitribai Phule. India pledged in the 2020 National Education Policy to modernize and revitalize the whole education system. NEP 2020 is a more diverse policy than the previous two policies. It is ambitious and claims universal access to quality education as its key aim. NEP 2020 single-handedly laid the foundation for the education system of the 21st century's education. Savitribai Phule's ideology who is also aiming for the pursuit of knowledge, wisdom, and truth as the highest human goal, which is quite similar to New Education Policy 2020.

NEED AND SIGNIFICANCE OF THE STUDY

In present day a key duty of the government in modern India is to ensure that everyone has access to education. This is because our educational system is focused on fairness and equality. But due to caste, gender, and religious difficulties, women are marginalized.

Savitribai Phule, one of India's earliest contemporary feminists and a social reformer as well as an educational reformer for women, was born on January 3, 1831. Her contribution to the advancement of women and the untouchables in the fields of

education and literacy is not only remarkable, but also her ideology is most renowned for the growth of Indian education and thoughts about women empowerment. This paper aims to explore the ideology of Savitribai Phule and relevance to 21st century's first education policy.

DEFINITION OF TECHNICAL TERMS USED

Ideology is an adjective used to characterize cultural, religious, or political views. An ideology is a person's or a group's set of views or convictions. A group of widely held beliefs about society is called an ideology, and it is typically used to support a particular course of action.

Relevance translates to "Important to the matter at hand" when used as a noun form of the adjective "Relevant." There is a connection between two topics such that thinking about one while thinking about the other is helpful.

Superstition can be called a manner of thinking or doing that is based on magic or luck and a fear of the unknown: the conviction that certain occurrences or objects will bring good or bad luck.

National Education Policy The National Education Policy (NEP) serves as a framework for restructuring the governance and regulations of the Indian educational system in order to achieve the nation's (sustainable) developmental goals. The goal of NEP is to provide an inclusive, egalitarian educational system that can benefit all students. Earlier two policies were formed in 1968 and 1986. After a gap of 34 years, a new policy come into existence that is NEP 2020.

OBJECTIVE OF THE STUDY

- To serve as an example of Savitribai Phule's educational philosophy in relevance to new educational policy.
- To know the ideology of Savitribai Phule in terms of NEP 2020.
- To understand Savitribai Phule's impact on modern education in twenty first century.

METHODOLOGY

This study is based on a wholly qualitative strategy related to the content analysis. For the purpose of the study, data have been collected from two sources: primary sources and secondary sources. The data from primary sources includes works from Savitribai Phule such as Kavya Phule (1854), Bavan Kashi Ratnakar (1892), etc., and secondary data includes eminent workers like Thom Wolf's changing Education: A note on the "original and unusual" world voice, world view and world venue of Jan Comenius and Savitribai Phule (2011), R. Pandey's Two distant feminist standpoints in Nineteenth century India: case studies of Savitribai Phule and Pandita Ramabai (2022), and P. J. Bhikhubhai's A critical study of NEP 2020 (2022). Also, the poetry, essays, publications, and other works by Savitribai Phule served as the main sources. Thesis, books about Savitribai Phule, published

journals, essays, and periodicals are examples of secondary sources.

ANALYSIS AND DISCUSSION OF THE OBJECTIVES:

Savitribai Phule's educational philosophy in relevance to new educational policy:

Education was once seen as a privilege reserved for the upper castes until the middle of the nineteenth century, but Savitribai Phule placed a strong emphasis on secular education as well as universal education, NEP 2020 also places great emphasis on promoting multidisciplinary and holistic education. She thought that if learners had access to food, drink, and shelter, they might receive a thorough education.

Savitribai Phule believed that education might be used to improve the lives of socially downtrodden castes. Promoting education aimed to dispel the then-dominant notion that women and members of lower castes had the necessary aptitude for it (Mondal & Farabi, 2023). Savitribai Phule placed a high value on the education of women in order to advance social change. In "Kavyaphule," which she referred to as "golden chance," Savitribai Phule also discussed her views on education. Here's how it works:

To attain self-reliance, let us pledge
And accumulate a wealth of knowledge
Without learning, life is an animal existence, waste
Don't rest, get an education, make haste
She put up the question, "should they be called animals?"
No knowledge, no learning
No affinity for either
A brain that lies fallow
Should they be called humans? (Pandey, 2015).

Savitribai Phule's thoughts on education, societal reforms and activities are also reflected in new national education policy. Those are:

Aim of education: According to Savitribai Phule, education should have the following aims-

Education for all: Savitribai Phule supported free education for everyone. She wished for all kids to have an education. All people, regardless of religion, caste, ethnicity, creed, colour, etc., must have access to education. It should not be exclusive to the upper castes.

National Education Policy also emphasised, recognizing, identifying and fostering the unique capabilities of each student. The rich heritage of ancient and eternal Indian knowledge and thoughts has been a guiding light for this policy.

Equality between men and women: Men and women in our society are equal,

according to Savitribai Phule. She gave women a lot of attention. The country can prosper if women are treated with the respect they deserve. Both men and women contribute significantly to the growth of a nation. In contrast to centuries-old custom, modern Indian women have not only achieved their place in the corporate world but also, they have ascended on the throne of leadership and entrepreneurship. The Indian Constitution guarantees that men and women are treated equally without any gender discrimination (Shetty M & Hans, 2019).

NEP 2020 also focused on inclusion and equality as an important aspect in the education system so that all students can survive in the education system.

Development of Humanism: Savitribai Phule has struggled for Dalit, members of lower castes, women, and widows for her entire life. She was the first woman to discuss Bahujan in India. She was active not just in the Muslim community but also in the reform of her own community. She made the Muslim woman Fatima Sheikh entirely secular by joining the organization and offering her a position as a teacher. She made efforts to influence the community's mindset as well as those of other communities. The Phule couple welcomed members of all castes and worked to abolish caste prejudice. This demonstrates her commitment to human religion. She felt that the advancement of humanism should be the goal of education (Santra & Madhu, 2023).

Regarding inclusiveness, we might state that segregation is against the law of nature. According to the new policy, inclusiveness encompasses not only educational perspectives but also it incorporates multilingualism, conceptual understanding as opposed to memorization, rote learning and disrespect to diversity.

Education for liberation: Savitribai Phule criticised the Brahmanical education system because it restricted education to high caste boys and forbade it for lower caste males. She saw education to be a tool for emancipation. She aimed to create an educational system in India that would enable downtrodden Shudras, Atishudras, and women to pursue their educations and advance society.

Phule's thought about liberation is very relevant even today. Her thought was very modern, updated, and relevant to the present context. Despite the change of times, her modern thinking is widely observed in current education policy. Like Jnan, Pragyaa and Satya are considered the highest human goals.

Curriculum: Curriculum is one among the four pillars of education. In order to complete school education efficiently, the curriculum is crucial and the proper implementation of it brings major success in the education system. Law, mathematics, history, geography, science, social science, medicine, English, and the arts are therefore the topics that Savitribai Phule has placed an emphasis on in order to promote social transformation in the community.

In terms of curriculum, the current education policy upholds a paradigm that is comparable to that of Savitribai Phule. In addition to science and math, it must incorporate fundamental arts, crafts, humanities, games, language, literature, culture, and values to develop all facets of the learner and make education more comprehensive, practical, and rewarding. By lowering the amount of curriculum content, giving students more freedom to select their subjects, and promoting flexibility.

Methods of teachings: Savitribai Phule used pragmatic philosophy in her education system. She used a variety of teaching techniques in the classroom to meet the requirements of her pupils, including recitation, lectures, experience-based learning, hands-on activities, and question-and-answer sessions. She has used the teaching method which has a strong influence till date. Her approach was student-centered, enquiry based, away from rote-learning and more pragmatic which is emphasized by NEP 2020.

Teacher: Society's support system is its teachers. They represent a free-spirited and unbiased group. In the evolution of society, they are very crucial. They will possess knowledge, engage in educational work without personal prejudice, be effective teachers in their field, serve as mentors to their pupils, inspire and motivate them, and preserve moral standards (Sheikh & Jahan, 2013).

The NEP 2020 grants teachers' autonomy in choosing appropriate pedagogy and encourages them to ensure the socio-emotional learning of their students, which is a critical component of holistic development. This is because it recognizes the contribution of teachers in reforming pedagogy to improve learning outcomes.

The ideology of Savitribai Phule in terms of NEP 2020

Savitribai Phule was a social reformer of the 19th century who worked in the field of women's education. She was the eldest daughter and both of her parents belonged to the Mali community, now an Other Backward Caste (OBC). Savitribai Phule is credited with founding feminism in India by bringing the feminist idea to the country for the first time. She was often referred to as contemporary India's first feminist. According to Rai and Sujata (2013), feminist ideology aims to achieve gender and sex equality.

First Girl's school: When Savitribai was still in her teens and eager to improve the position of women, she and Jyotirao founded the first locally administered school for females in Pune (at the time, Poona) in 1848.

Savitiri served as the headmistress of the ladies' school that Jyothirao Phule built a year after Savitiri finished her training in 1848. She established India's first women's school. People were against her conducting a school for females at that time

since female education was only given a minimal amount of priority. In particular, the higher castes were adamantly against Dalit education (Biswas & Bhattacharyya, 2022).

NEP 2020 also acknowledges a "light but tight" regulatory framework for autonomy, good governance, and the empowerment of women's education, while also focusing on the education system as a whole, much like Savitribai Phule's concept.

Enthusiastic teacher: The first and youngest female teacher in India was Savitribai Phule. In opposition to that period's Brahmanical culture, she battled for women's suffrage and the education of children of all faiths. Every day as she walked to school, she faced harassment from others who threw stones, dirt, and excrement at her (Pandey, 2015). She used to wear two saris to school and switch out the soiled one for the clean one. She experienced a lot of persecution from religious men as a result of her fight for women's education. She told people who called her names, "God bless you; I'm just doing my duty." The British government praised the Phule family for their educational contribution on November 16, 1852, and Savitribai was named the best teacher.

The future of our country and our children is being shaped by our teachers, according to the new education policy 2020.The reason Indian teachers are held in the highest regard by society is due to their noble profession. Teachers are just the best and most knowledgeable among us. In addition to having a solid foundation in Indian knowledge, ethos, and customs, a teacher or guru needs to be up-to-date on the latest developments in pedagogy and education.

Women's empowerment: The concept of empowerment may have many faces, dimensions, and layers. Therefore, it is not this or that; rather, it is the activity and interaction of several aspects, including those that are physical, economic, political, mental, psychological, and attitudinal. Women's empowerment can be defined as a process by which women obtain a larger proportion of control over resources, including those that are material, human, and intellectual like knowledge, information, and ideas as well as financial resources like money and control over decisions that are made in the home, community, society, and country. The phrase "women's empowerment" is now associated with women's fights for equality and social justice (Islam, 2018).

Savitribai Phule made numerous contributions to women's empowerment as a trailblazer. NEP 2020 stipulates that in order to increase the country's ability to offer equitable, high-quality education for all girls and transgender students, a Gender Inclusion Fund (GIF) specifically for girls and transgender students must be established. In addition, NEP 2020 highlights the significance of giving girls access to high-quality education and the role that women should play in decision-making in

educational institutions.

Women's education: Girls are less likely to succeed in school due to a number of reasons, including being expected to take care of the home, being brought up to accept a domestic role, having mothers who are illiterate and unable to educate their children, depending on men for financial support, and occasionally having to deal with child marriage (Thakur, 2012). When Savitribai Phule tried to raise awareness of women's education during the time, she had to face boycotts and criticism, mostly from males. One of her strongest supporters as she strove to raise the status of women in India and disseminate awareness of the value of women's education. When Phule was nine years old and uneducated, she wed Jyotirao Phule. Savitribai Phule taught 150 pupils while founding three schools in 1851including 18 schools later for upper cast women.She also started schools for Dalit and lower caste women. She gave stipends to women to encourage them to enroll in education (Mondal & Farabi, 2023).

A nation cannot develop without its proper education system. A nation's educational standards require its education policy to be well-defined and forward-looking, as education promotes both social and economic prosperity. By means of curriculum alignment at all educational levels, appreciation for diversity, encouragement of multilingualism, adaptability, and comprehensive education NEP 2020 aims to establish an educational framework that fosters a critical and creative thinking environment among students.

The contribution of Savitribai Phule on education in 21st century in relevance to NEP2020

This research attempts to explain why she is considered as the "mother of contemporary girls' education" and how her views may help to emancipate women and how her actions have continued to have an influence on the educational system of the twenty-first century.

Equitable Education: Phule and her husband founded the first Indian run girls' school in Pune. They worked together to abolish the discrimination and unfair treatment of people based on caste and gender. As per new education policy, if equitable education is to be attained three things must be given special importance, those are – the pursuit of knowledge (Jnan), wisdom (Pragyaa), and truth (Satya). This policy is also focusing on inclusive education.

Universal access to Education: Phule's didn't want education to be limited only higher class (Brahmin) people of society. She wanted education for all and to spread it among all. So, she took various initiatives for the development of education. By following her footsteps, NEP also emphasized universal access to education for all and curtailing the dropout rate.

Fundamental Literacy and Numeracy: The new education policy defines it as an urgent and essential precondition for learning. The fundamental literacy maybe described as the capacity for learning the basic numerical operations, reading, writing, and comprehension of simple material.

Savitribai Phule has fought against injustice in the 19th century to assure Dalit education. She also advocates for the bare minimum of education required to pursue one's legal rights. Since conventional schools were only open at night, many marginalized and poor people had no choice but to attend them. This is why she founded special night school in 1855.

Holistic & Multidisciplinary Education: Phule's philosophy went beyond a book-centric approach to education; she stressed the importance of soft skills and care in education. The new education policy in India draws on India's long history of holistic and multidisciplinary learning, as well as the vast body of literature that spans multiple disciplines. This approach aims to develop all aspects of human development—intellectual, artistic, social, physical, emotional, and moral—in an integrated way.

Life-long Learning: Savitribai Phule opposed restricting education to a set of rules or skills, such as basic literacy and numeracy. She advocated for universal and lifelong education. She therefore made a number of decisions at that time. People can advance both individually and professionally by making use of the vast array of personal, civic, economic, and lifetime learning opportunities that come with literacy and basic education.

The management of the RTE and Mid-Day-Meal programs: The Mid-Day Meal Program was started by the central government in 1995 for children of I to VIII classes (ages 6 to 14). According to a 2013 Pratichi Trust survey, the Mid-Day-Meal program has decreased the dropout rate (Majhi, 2022). The Right to Education Act's midday meals program is a fantastic initiative for keeping pupils in school today, but Savitribai Phule and her husband established it nearly 180 years ago. The Phule couple launched programs to eradicate the malnutrition by offering health care to every kid at their school. They launched the RTE and Mid-Day-Meal programs in 1850.

The Mid-Day Meal program will also be expanded to elementary school preparatory classes, according to new education policies. In the context of putting NEP 2020's guiding principles—access, equity, quality, affordability, and accountability—into practice, it is crucial. The Pradhan Mantri Poshan Yojana (PMPY), often known as the PM POSHAN Scheme, has replaced the Mid-Day Meal program.

CONCLUSION

Savitribai Phule placed a strong emphasis on universal and secular education which currently NEP 2020 also has given importance. She observed education as a tool for improving the living condition of the socially disadvantaged caste. She has a significant impact on women and their access to education. Not only as an educationist but also as a social reformer, Savitribai Phule promoted widow remarriage and founded Mahila Seva Mandal. She also advocated against infanticide and created a centre for the rehabilitation of infants born outside of marriage. For the benefit of single mothers and their children, Phule established an anti-infanticide home, which helped many pregnant Brahman widows. Her finest humanitarian endeavours include founding the "Satyashodhak Samaj" and promoting inter-caste unions. She fights and works for women's equality in all fields. Her creation of the night school and connection to RTE in the mid-day meal program are having a good influence on the current situation. NEP 2020 also promotes the professional development of female teachers, ensuring that they are well-equipped to provide quality education. Additionally, the policy encourages the recruitment of female teachers in rural and remote areas, where the gender gap in education is often more pronounced.

It is clear how she contributed to numerous facets of general education at that time. Since the begining of schools, she has aided in the eradication of gender disparity in education, the advancement of equal rights, and the modernization of the educational system. It is genuinely unmatched how she plunged right into promoting education while being a married woman with a successful career. Her primary areas of focus include the women's education movement and the expansion of women's education. She has been referred to as an Indian feminist because of her contributions in different fields.

Savitribai Phule's thought and her educational ideology is very much relevant to present educational context. Its effect is also observed in new education policy. It cannot be denied that Savitribai Phule encourages kids to work hard in school and pursue an education. Actually, she wants to empower everyone through knowledge mainly practical knowledge. That's where his thoughts and keynote of NEP 2020 come to this particular point. Lastly, to conclude with her poem entitled "Go, Get Education," in which she encourages those who are oppressed. She has advised them to get education. Like Savitribai Phule, NEP 2020 is also against the segregation of learning since it believe that – "Segregation is against the law of Nature."

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ELEMENTARY EDUCATION OF PURBA MEDINIPUR DISTRICT OF WEST BENGAL: AN EMPIRICAL STUDY

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ABSTRACT
The elementary level of education shapes the basic foundation of children and it is the most important stage in our education system. All educationists and policy-makers emphasize more on elementary education since it is considered to be the foundation for the growth of not only the individuals but for the welfare of the entire nation of any country across the globe. To ensure the Universalization of Elementary Education (UEE), the Government of India has taken so many initiatives since independence; these are - Operation Black Board in 1987-1988, the District Primary Education Programme (DPEP) in 1994, Sarva Shiksha Abhiyan (SSA) in 2000-2001. In this study, an attempt has been made to know the Teaching-Learning environment at the elementary level of education in the Purba Medinipur district of West Bengal, India.The data have been collected through a self-made interview schedule prepared for the head of the institution. The researcher also closely observed the teaching-learning process in the classroom, and interaction with the students. It has been found that about 24% of elementary institutes in the Purba Medinipur district of West Bengal, where the scarcity of teachers sustained. It was also found that about 27% of schools where the numbers of classrooms are not sufficient. The scarcity of Teaching-Learning Materials has been found in 24% of institutes. It has been found that about 18% of schools in Purba Medinipur district of West Bengal, where Continuous and Comprehensive Evaluation have been implemented moderately.

Keywords: Elementary Education, Teaching-Learning environment, Continuous and Comprehensive Evaluation.

INTRODUCTION
Education is not only considered essential for the pleasant development of one's personality but also for the growth and progression of the country as a whole.

The elementary level of education shapes the basic foundation of children and it is the most important stage among all levels of education. All educationists and policy-makers emphasize more on elementary education as it is regarded as the foundation for the growth of not only the individuals but for the welfare of the entire nation of any country across the globe. Elementary education in India is regarded as the foundation of compulsory schooling that is considered essential for individuals. Empirical studies also point out that investment in elementary education increases the output in all the sectors of the economy much more than other levels of education and that economic returns to investment in primary education are greater than those arising from other levels of education (Colclough, 1980). Universalization of Elementary Education (UEE) is still a distant prospect in a substantial part of the world. In India, the central government, the state governments, and other organizations have been involved in the progression of elementary education. The 86th Constitutional Amendment in 2002 made education the fundamental right of children within the age group of six to fourteen years. The Right of Children to Free and Compulsory Education Act, 2009, commonly known as the Right to Education Act (RTE), 2009 was recognized, it stated all children should be made provision free education up to the age of fourteen years and for children with special needs up to the age of eighteen years. To ensure the Universalization of Elementary Education, the Government of India has taken so many initiatives since its independence; those are Operation Black Board in 1987-1988, the District Primary Education Programme (DPEP)in 1994, Sarva Shiksha Abhiyan (SSA) in 2000-2001. After taking such so many initiatives from the government's end, it is essential from the common ground to review the policies and provisions from time to time and to make teaching-learning workable for the children. Classrooms are considered to be one of the important areas, where learning takes place. It is important to make the students feel comfortable within the classrooms so that their learning and understanding effectively take place. In this context, we may cite one of the unforgettable statements made by Daulat Singh Kothari in his Report i.e. in the Indian Education Commission (1964-1966): "The Destiny of India is now being shaped in Her Classroom." In this study, an attempt has been made to review the Teaching-Learning environment at the elementary level of education in the Purba Medinipur district of the Indian state of West Bengal.

OBJECTIVES OF THE STUDY

The objectives of the present study include:

- To know about the Teaching-Learning environment at the elementary level of education in Purba Medinipur district of West Bengal, India.
- To assess the practices and follow up actions of Continuous and Comprehensive Evaluation.

- To understand the problems and barriers prevailing in Teaching-Learning environment at the elementary level of education in the district.

OPERATIONAL DEFINITIONS

- Elementary Education: In this present study, elementary level of education is the education level from the Class- I standard to Class- VIII standard.
- Primary School: In this present study, Primary Schools are those schools consisting of Class- I to Class- IV or V.
- Upper-Primary School: In this present study, Upper-Primary Schools are those schools consisting of Class- VI to Class- VIII in ambience of Secondary or Higher Secondary set-up.

METHODOLOGY OF THE STUDY

The present study is basically a survey research taking a specific district as case study area. This study is designed to know the Teaching-Learning environment at the elementary level of education in the Purba Medinipur district of West Bengal, India. The data have been collected through a self-made interview schedule prepared for the head of the institution along with close observation of classroom teaching-learning processes and interaction with the students. In this study, we have covered 49 schools including both Primary and Upper-Primary schools situated in different parts of Purba Medinipur district of West Bengal, India. Among these 49 studied schools, 38 schools are Primary Schools and 11 schools are Upper-Primary Schools. The data have been collected from September to December 2023. Then, the collected data have been analyzed qualitatively.

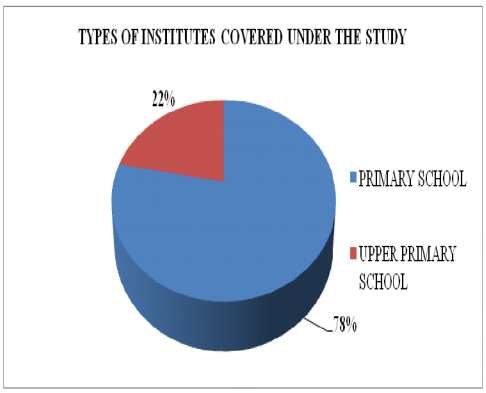

Figure 01: Types of Institutes Covered under the Study Source: Field Data

FINDINGS AND DISCUSSION

To know the present teaching-learning environment; practices and follow up actions of Continuous and Comprehensive Evaluation, along with the problems and barriers prevailing in Teaching-Learning environmentat in the elementary level of education of the Purba Medinipur district of West Bengal, we have collected data on the following research subjects that are depicted now along with discussion.

A) **Pupil-Teacher Ratio:** This study reveals that 76% of schools where the Pupil-Teacher ratio is within 30:1, and 24% of schools where the Pupil-Teacher ratio is above 30:1. According to the Right to Education (RTE) Act, 2009 and very recent National Education Policy (NEP), 2020 which is under implantation process in India at present, the Pupil-Teacher ratio at the elementary level of education should be within or up to 30:1. Thus, from this finding it can be said that about 24% elementary institutes in Purba Medinipur district where the scarcities of teacher are found.

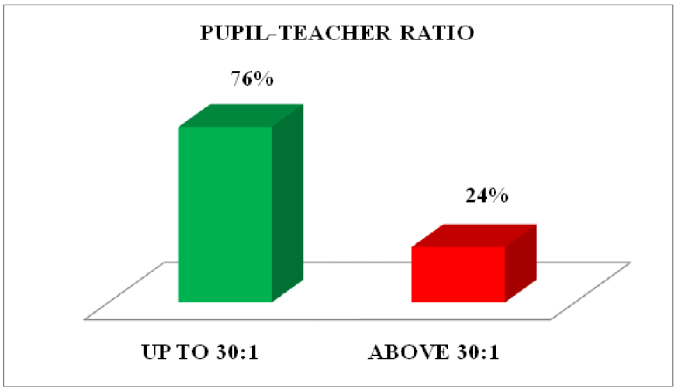

Figure 02: Pupil-Teacher Ratio Source: Field Data

B) Teacher's Professional Qualification: The professional qualification of a Teacher is a very important parameter for providing quality education to the students. As per the norms and regulations made by India's top apex body in the field of Teacher Education, i.e. National Council for Teacher Education (NCTE) and subsequently according to the Right to Education Act, 2009 and the Country's latest National Education Policy (NEP), 2020, at all level of School education including elementary level of education, all teachers should have appropriate Teacher Education course. For the Elementary level of Education, teachers should have any of the Teacher Education Courses like a Diploma in Education (D.Ed.), Diploma in Elementary Education (D.El.Ed.), or Bachelor of Education (B.Ed.) with six months Bridge course. Among the studied institutes in Purba Medinipur district of West Bengal, it has been found that 3% of teachers who are presently working as a teacher at the elementary level of students have no such Teacher Education Course, whereas

97% of teachers have that course.

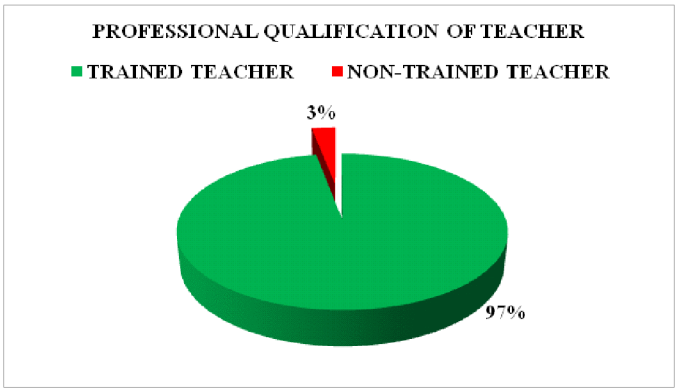

Figure 03: Profession Qualification of Teacher Source: Field Data

C) Continuous Professional Development: We have collected data regarding the continuous professional development of teachers in the last three years. It has been found that only 49% of schools under study from where teachers have attended workshops, seminars, short-term training, orientations etc. for their professional development but 51% of schools were the teacher has attended not such type of any professional development programme or training courses in the last three years.

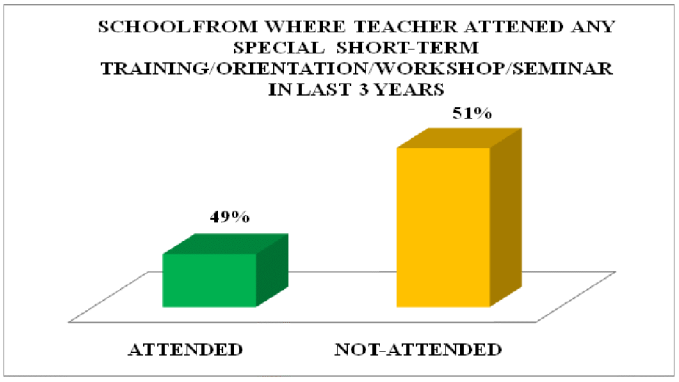

Figure 04: Continuous Professional Development Source: Field Data

D) Status of Classroom: It has been found that about 27% of schools under study where the numbers of classrooms are not sufficient. During our data collection period, we saw students did have not enough places to sit down comfortably in their classes at those schools and in that situation, they are continuing their classes; whereas, about 73% of schools under study where the numbers of Classrooms are sufficient.

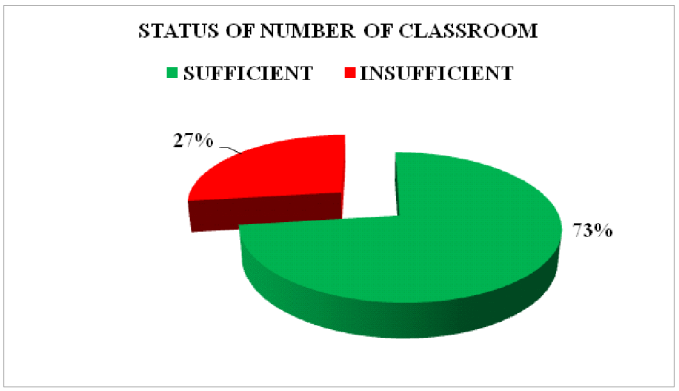

Figure 05: Status of Number of Classroom Source: Field Data

E) Using of Teaching-Learning Material (TLM): When we asked the Head of the Institute regarding using of Teaching-Learning Material by the Teachers in their daily classes, about 98% of the schools where Heads of the Institute said that teachers used Teaching-Learning Materials in their classes. It is a very alarming situation that 2% of Head of the Schools said that teachers do not use Teaching-Learning Materials in their daily classes though there is no scarcity of Teaching-learning materials. These findings were also cross-checked when we interacted with students in the studied schools in Purba Medinipur district, West Bengal.

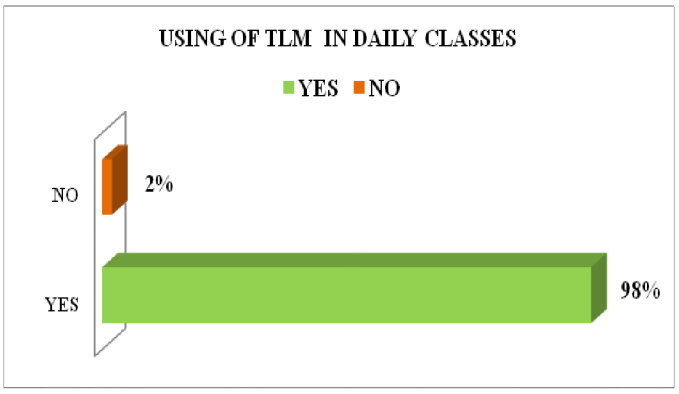

Figure 06: Using of TLM in Daily ClassesSource: Field Data

F) Availability of Teaching-Learning Material (TLM): Though 2% of school teachers do not use Teaching-Learning Materials in their daily classes in spite of sufficient Teaching-Learning materials available in their schools; but the scarcity of Teaching-Learning Materials is found in 24% of institutes under study. About 76% of schools have sufficient Teaching-Learning Materials.

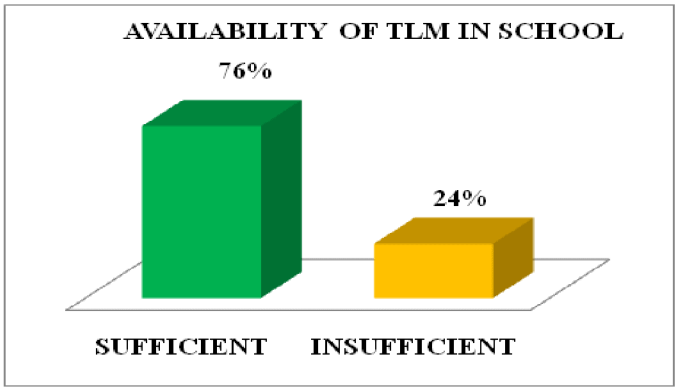

Figure 07: Availability of TLM in School Source: Field Data

G) Continuous and Comprehensive Evaluation (CCE): Evaluation is the utmost important area in education for ensuring the all-round development of children through education. The evaluation must be first continuous and subsequently the evaluation should be comprehensive in all aspects i.e. cognitive, affective, and psycho-motor developmental aspects of children for achieving all-round development of children through education. In India, after the implementation of Sarva Shiksha Abhiyan (SSA) in 2000-2001, Continuous and Comprehensive Evaluation should be ensured at the elementary level of education to ensure the all-round development of children through education.

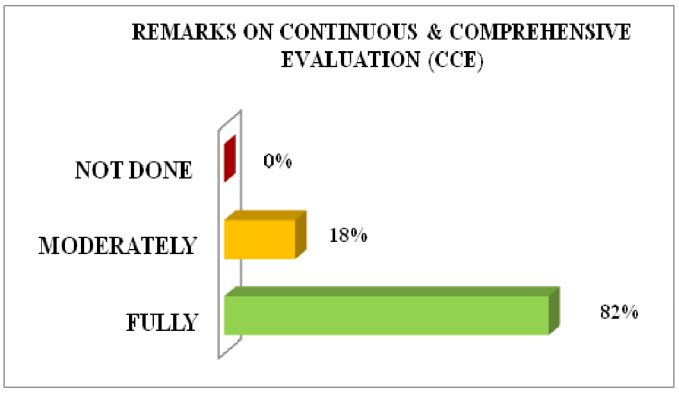

Figure 08: Remarkson Continuous and Comprehensive Evaluatio **Source:** Field Data

After 23 years of implementation of Sarva Shiksha Abhiyan, it has been found that 18% of schools in Purba Medinipur district in West Bengal are following 'moderately' the Continuous and Comprehensive Evaluation model whereas 82% of

schools' Head Teacher/ Head Master claimed that they are implementing Continuous and Comprehensive Evaluation 'fully' in their schools.

H) Parent-Teacher Meeting: It is also one of the important aspects for ensuring the all-round development of children through education and this provision also has been laid down in Sarva Shiksha Abhiyan which was launched in 2000-2001 for aiming to provide elementary education to all children across India. In any education ecosystem, role of parents cannot be ignored. So, in every perspective, Parent-Teacher meetings should be held on a regular basis to ensure the all-round development of children through education, particularly because it is very effective for the elementary level of students. It has been found that Parent-Teacher meetings are held on a regular basis in 98% of schools, but there are still 2% of schools where Parent-Teacher meetings are not held on a regular basis.

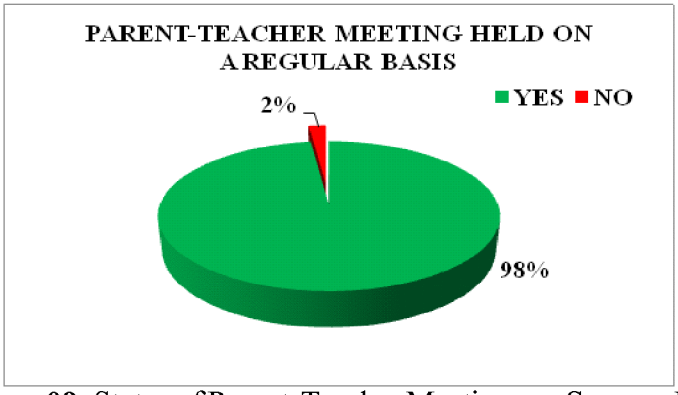

Figure 09: Status of Parent-Teacher Meeting **Source:** Field Data

FINDINGS

Some important findings of this study that should be highlighted, those are:-

- It has been found that 76% of schools under study where the Pupil-Teacher ratio is within 30:1.
- It has been observed that 24% of schools under study where the Pupil-Teacher ratio is above 30:1.
- It has been explored that 97% of teachers who are presently working as a teacher at the elementary level of students have Teacher Education Course.
- It has been explored that 3% of teachers who are presently working as a teacher at the elementary level of students have no Teacher Education Course.
- It has been found that only 49% of schools under study from where teachers have attended workshops, seminars, short-term training,

orientations etc for their professional development in last three years.

- About 51% of schools under study where in last three years no teacher has attended such type of professional development programme or training.
- It has been found that about 73% of schools under study where the numbers of classrooms are sufficient.
- It has been explored that about 27% of schools under study where the numbers of classrooms are not sufficient.
- It has been explored that about 98% of Schools' heads of Institutes said that teachers use Teaching-Learning Materials in their daily classes.
- It is a very alarming situation that 2% of heads of Institutes said that teachers do not use Teaching-Learning Materials in their daily classes though there is no scarcity of Teaching-learning materials in those schools.
- It has been found that about 76% institutes under study have sufficient Teaching-Learning Materials.
- The scarcity of Teaching-Learning Materials is found in 24% of institutes under study.
- It has been found that about 82% of schools in Purba Medinipur district, West Bengal where Continuous and Comprehensive Evaluation have been implemented fully.
- It has found that about 18% of schools in Purba Medinipur district, West Bengal where Continuous and Comprehensive Evaluation have been implemented moderately.
- It has been found that 98% of schools where Parent-Teacher meetings are held on a regular basis.
- It has been found that 2% of schools where Parent-Teacher meetings are not held on a regular basis.

CONCLUSION

In conclusion, we may highlight both positive and negative findings. This study reveals some positive findings. These are — about 76% institutes have good pupil-teacher ratio i.e. within 30:1; about 97% teachers who are presently working have professional teacher education course; about 49% of schools under study from where teachers have attended workshops, seminars, short-term training Programme, orientations etc for their professional development in last three years; about 98% of Schools' heads of Institutes said that teachers use Teaching-Learning Materials in their daily classes; about 82% of schools in Purba Medinipur district of West Bengal, where Continuous and Comprehensive Evaluation have been implemented fully;

and about 98% of schools where Parent-Teacher meetings are held on a regular basis.

Now, we may highlight the negative findings of the study. It has been found that about 24% of elementary institutes in the Purba Medinipur district in West Bengal, where a scarcity of teachers sustained. Among the studied institutes in the Purba Medinipur district of West Bengal, it has been found that about 3% of teachers are presently working as a teacher of the elementary level, who have no such Teacher Education Course. About 51% of schools, no teacher has attended the workshop, seminar, short-term training, and orientation programme etc. since last three years for their professional development. It has been found that there are 27% of schools where the numbers of classrooms are not sufficient. It is very alarming that there are 2% of Head of the Schools who reported that teachers do not use Teaching-Learning Material in their daily classes. The scarcity of Teaching-Learning Materials has been found in 24% of institutes under study. It has been found that about 18% of schools in the Purba Medinipur district have implemented the Continuous and Comprehensive Evaluation 'moderately' in the classroom. Still, 2% of schools, where Parent-Teacher meetings are not conducted on a regular basis. For the interest of providing quality elementary education to every child concerned authorities, policy-makers should immediately focus on the abovementioned negative findings for the betterment of elementary education in India.

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EMBRACING INCLUSIVE EDUCATION: AN ANALYSIS OF NEW EDUCATION POLICY 2020

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ABSTRACT

Inclusive Education (IE) is a novel method of educating children with disabilities alongside their typically developing peers within the same educational setting. The Wisconsin Education Association Council (WEAC) describes inclusion as a commitment to guaranteeing that each student is provided with education in their assigned school and classroom, to the highest degree possible. The Disability Discrimination Act (DDA) of 2005 and the SEN and Disability Act (SENDA) of 2001 aim to prevent discrimination between disabled and non-disabled children, ensuring equal access to educational and infrastructural resources. The National Education Policy 2020 (NEP 2020), introduced by the Union Cabinet of India on July 29, 2020, significantly expands the scope of Inclusive Education. Chapter 6 of NEP 2020 focuses on Equitable and Inclusive Education, emphasizing that education is a powerful tool for achieving social justice and equality. The policy highlights the importance of ensuring that no child in India is deprived of learning opportunities and success due to their background or circumstances of birth. According to MHRD statistics from 2009, approximately 80% of the rural population in India lacks access to special schools, and an estimated 8 million children are out of school due to factors such as caste, gender, poverty, and disability. Research on Inclusive Education and NEP 2020 underscores the necessity for further studies on key areas such as the challenges and obstacles to inclusive education in India, the attitudes of stakeholders like students, teachers, parents, and the public towards IE, the main issues faced by educational institutions in implementing IE, and the advantages and disadvantages of IE within NEP 2020.

Keywords: Disabilities, Children with Special Needs Gender Equality, Inclusive Education, NEP 2020.

INTRODUCTION

Inclusion is a fundamental right for all individuals, regardless of their race, religion, gender, disability, status, caste, creed, or income. Its purpose is to ensure that everyone has equal opportunities and to eliminate barriers and discrimination in public life. The National Education Policy 2020 (NEP 2020) was approved by the Union Cabinet of India on July 29, 2020, and it outlines the vision for India's new

education system. It provides a comprehensive framework for education, from elementary to higher education, as well as vocational training in both rural and urban areas of India. The goal of the policy is to transform India's education system by 2040.

Following the release of the policy, the government clarified that no one would be compelled to study a specific language, and there would be no shift from English to any regional language as the medium of instruction. The language policy in NEP serves as a broad guideline and advisory, and it is the responsibility of states, institutions, and schools to decide on its implementation. Education in India is a Concurrent List subject, and the country has made significant progress in terms of education infrastructure and student enrollment in recent years. The enrollment rate in the upper primary level (Class 6-8) has witnessed a significant boost, thanks to the implementation of the Right to Education Act in 2009. Nationally, between 2009 and 2016, there was a 19.4 percent increase in the number of students at the upper primary level. The implementation of sanitation and safety initiatives has also played a role in sustaining this enrollment across the country. The literacy rate of women in the Census 2011 was documented at 65.5%. For Muslims, it had increased to 68.5%, and for Scheduled Caste communities, it had reached around 66%. Despite notable advancements in various key areas, the education systems in India are still facing difficulties related to inequality and exclusion. The majority of the rural population and the vulnerable and marginalized groups still struggle to access quality school education. This issue is even more pronounced in the higher education sector.

THE FUNDAMENTAL DISSEMINATION OF THE NATIONAL EDUCATION POLICY 2020

I. The NEP 2020 has set ambitious goals for education, aiming to provide universal education from preschool to secondary level and achieve a 100% Gross Enrolment Ratio (GER) in school education by 2030. This means that every child will have access to quality education, regardless of their background or circumstances.
II. NEP 2020 emphasizes the importance of implementing an open schooling system to address the issue of 2 crore out-of-school children and bring them back into the mainstream education system.This system will provide flexible learning opportunities for those who have dropped out or have not been able to attend regular schools, ensuring that they too have access to education and can acquire the necessary skills for their future.
III. In lieu of the existing 10+2 system, a fresh 5+3+3+4 curricular framework will be implemented, accommodating various age groups: 3-8, 8-11, 11-14,

and 14-18 years. This restructuring will bring the previously uncovered age group of 3-6 years under the school curriculum. This is a significant development as this age group is globally recognized as a crucial stage for the development of a child's mental faculties.

IV. Overall, the NEP 2020 highlights the commitment to providing inclusive and holistic education for all children. By focusing on universalization, open schooling, and a revised curricular structure, the policy aims to ensure that every child has the opportunity to receive a quality education and develop their full potential. The updated system will feature a 12-year schooling structure, incorporating three years of Anganwadi or pre-schooling.

V. The focus will be on foundational literacy and numeracy, with no rigid separation between academic, extracurricular, and vocational streams in schools. Vocational education will begin from Class 6 and include internships to provide practical experience. Additionally, teaching up to Grade 5 will be conducted in the mother tongue or regional language, without imposing any language on students.

VI. Assessment reforms will be implemented with the introduction of a 360-degree holistic progress card, which will track student progress towards achieving learning outcomes.

VII. A new National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated by the NCTE in consultation with NCERT. This framework will provide comprehensive guidelines for teacher education.

VIII. By 2030, all teachers will be required to hold a 4-year integrated B.Ed. degree as the minimum qualification, thereby ensuring their readiness and expertise in the field of education.

IX. With the introduction of 3.5 crore extra seats, the gross enrolment ratio in higher education is set to reach 50% by 2035. This strategic move will open up more avenues for students to engage in advanced studies.

X. The policy aims to establish a broad-based, multi-disciplinary, and holistic undergraduate program. This program will have flexible curricula, creative combinations of subjects, integration of vocational education, and multiple entry and exit points with appropriate certification.

XI. An Academic Bank of Credits will be established to facilitate the transfer of credits between institutions, making it easier for students to switch courses or pursue interdisciplinary studies.

XII. Multidisciplinary Education and Research Universities (MERUs) are being established as prime examples of exceptional multidisciplinary education within the nation. These universities will be equivalent to prestigious institutions such as IITs and IIMs, offering education of global standards.

XIII. The National Research Foundation will be established as an apex body to promote a strong research culture and build research capacity across higher education institutions. This will encourage innovation and contribute to the advancement of knowledge in various fields.
XIV. HECI is being established to oversee higher education in India, with four distinct verticals for regulation, standard-setting, funding, and accreditation.
XV. Both public and private higher education institutions will be subject to the same regulations, accreditation processes, and academic standards.
XVI. The plan includes phasing out college affiliations over 15 years and implementing a gradual process for colleges to attain graded autonomy, aiming for each college to eventually become autonomous or a constituent college of a university.

INCLUSIVE EDUCATION (IE)

Inclusive education ensures that both children and their parents have the right to access mainstream education where the needs of the children and the desires of the parents are met. It is a modern approach to educating children with disabilities alongside their typically developing peers in the same learning environment. In inclusive classrooms, there is a diverse mix of students with varying learning styles, talents, abilities, and levels of functioning. This approach includes a wide range of students, such as typical learners, those with physical disabilities, intellectual disabilities, multiple disorders, visual or hearing impairments, and transgender students. Many educational institutions have taken steps towards inclusive education, and research has shown that it leads to significant improvements in the quality of education. All students, regardless of their challenges, are placed in age-appropriate general education classes in their local schools to receive high-quality instruction, interventions, and support that help them succeed in the curriculum.

FOCUS ON INCLUSIVE EDUCATION IN NEP 2020

The National Education Policy emphasizes the importance of ensuring inclusive and equitable education for socially and economically disadvantaged groups. These groups, known as Socio-economically Disadvantaged Groups (SEDGs), are identified based on various factors such as gender identities (female and transgender), socio-cultural identities (scheduled castes, scheduled tribes, OBCs, and minorities), varied geographical backgrounds of students from villages, small towns, and districts, coupled with the diverse socio-economic conditions of migrant communities, low-income households, poor situations, orphans, beggars, and the urban poor, contribute to the rich tapestry of our society. Special Education Zones will be established to cater to the needs of these disadvantaged groups. Recent research reveals a significant drop in school admissions from Grade 1 to Grade 12 among socio-economically disadvantaged groups (NEP 2020, 6.2). As per U-DISE

2016-17 figures, approximately 19.6% of students are from impoverished backgrounds like orphans, beggars, urban poor, and similar categories. At the primary level, 19.6% of students belong to Scheduled Castes, the percentage decreases to 17.3%. Dropout rates are particularly high for Scheduled Tribes students (10.6% to 6.8%), differently-abled children (1.1% to 0.25%), and even more so for female students (NEP 2020, 6.2.1). NEP 2020 promotes multidisciplinary education to ensure the holistic development of students.

Numerous researchers have undertaken extensive surveys and examined relevant literature on Inclusive Education and its effects on educational institutions, students, parents, teachers, and the general public. Through their efforts, they have arrived at significant conclusions, highlighting the importance of this topic. The introduction of NEP 2020 has further expanded the scope of Inclusive Education, replacing Integrated Special Education. This review paper delves into the subject of Inclusive Education, presenting diverse perspectives from various research scholars in different contexts, ultimately aiming to reach a shared consensus.

SOCIO-ECONOMICALLY DISADVANTAGED GROUPS (SEDGS)

The NEP 2020 acknowledges the significant underrepresentation of certain groups within the current educational systems. In order to address their unique educational requirements, the NEP has combined gender identities, socio-cultural identities, geographical identities, disabilities, and socio-economic conditions to form a new social group known as SEDGs. The policy primarily focuses on promoting inclusivity for these groups. As previously mentioned, these groups face higher dropout rates due to various factors, including limited accessibility for tribal communities (geographic) and historical exclusion of communities based on socio-cultural identities.

To cater to their specific needs, the NEP 2020 proposes a range of policies and initiatives, such as targeted scholarships and conditional cash transfers to encourage parents to send their children to school. Additionally, providing bicycles for transportation, which has proven effective in increasing enrollment rates in the past, is also recommended to enhance representation.

RECOGNITION OF GENDERED IDENTITIES IN NEP 2020

The NEP 2020 acknowledges that women and transgender individuals from all social and economic backgrounds are the most adversely affected. To address this, plans are in place to implement initiatives such as providing bicycles to form cycling groups and creating walking groups to schools, encouraging community

participation and ensuring the safety of these vulnerable students. Additionally, recognizing the critical need for education for girls, the new policy proposes the establishment of a 'Gender-Inclusion Fund' to create better educational environments for women and transgender individuals.

This fund will be accessible to states to develop systems that facilitate the inclusion of these students. It will support initiatives such as sanitation provisions, conditional cash transfers, bicycle distribution schemes, and more. Furthermore, the funds will enable states to promote and expand effective community-based interventions that address specific barriers faced by female and transgender children in accessing and participating in education. In line with this, the policy suggests the establishment of Kasturba Gandhi Balika Vidyalaya to provide improved boarding facilities, overcoming geographical obstacles to education.

However, despite these innovative ideas and proposals, the NEP falls short in addressing the fundamental issues of inclusivity and the conversations that are lacking in the current schooling systems. Historically, school curriculums have failed to address discrimination based on sexual identification and orientation, as well as the specific challenges faced by transgender individuals in the workplace. The basic respect that should be accorded to all citizens is regrettably withheld from these individuals. Although Article 377 has been abolished by the judiciary, discussions surrounding identity are still considered taboo, resulting in numerous instances of discrimination against these individuals in the past.

According to the recent press release by CBSE, there were 18,89,878 candidates in class 10 and 1,206,893 candidates in class 12. Among the students who registered for the class 10 exam, 788,195 were girls, 1,101,664 were boys, and only 19 were transgender persons. In class 12, there were 522,819 girls, 684,068 boys, and six transgender persons. This data clearly highlights the significant numerical disparity, making transgender individuals the most underrepresented minority in our education system.

The stark difference in numbers serves as a strong indication that transgender individuals face disproportionately high barriers. Unfortunately, the new policy fails to address how it intends to increase enrollment for these students or provide solutions to the discrimination they encounter within educational institutions. This discrimination often leads to disproportionately high dropout rates among transgender students.

ACKNOWLEDGEMENT OF INDIVIDUALS WITH SPECIAL NEEDS

The policy acknowledges children with special needs and advocates for their inclusion in mainstream education systems. It aligns with the objectives of The Rights of Persons with Disabilities (RPWD) Act 2016. Additionally, the policy aims to hire special educators in all school complexes to ensure that teaching is more

inclusive and responsive to the needs of children. Children with significant disabilities will have the option to pursue home schooling and will be provided with skilled educators who can facilitate their learning and provide them with the best educational opportunities. Furthermore, teachers will receive training to identify learning disabilities in children at an early stage and support them in their education and mental well-being. To create fair assessment systems for children with learning disabilities, the National Assessment Centre, PARAKH, will be established. The policy also proposes alternative schooling models to advance this objective.

However, the NEP's ambitions and ideals in this regard may be overly optimistic. It fails to acknowledge that not only are most teachers ill-equipped for such specialized roles, but also that a significant number of schools in India suffer from severe staff shortages. The policy also lacks clarity on how it plans to create accessible mechanisms for home schooling. For example, a recent evaluation conducted by the Delhi Child Rights Commission revealed that 60% of schools reported no students with disabilities, while another 28% reported less than 1% of such students.

It emphasizes that individuals with disabilities are poised to face negative socio-economic consequences compared to those without disabilities. The recent policy lacks a clear plan on ensuring accessibility to education for all individuals. Furthermore, it does not outline the necessary adjustments to the curriculum to ensure that students with learning disabilities are not marginalized in the highly competitive educational settings prevalent in Indian schools today.

FORMATION OF SPECIAL EDUCATIONAL ZONES

One of the notable recommendations of the NEP involves the establishment of Special Educational Zones (SEZs) in regions with a significant population of Socio Economically Disadvantaged Groups and in aspirational districts. The primary objective is to enhance educational outreach in the most remote and underserved areas of India. This will be achieved through the allocation of additional resources and the coordination of various schemes and programs by both the Central and state governments to uplift these underdeveloped regions.

While this concept is innovative and shows potential to improve educational opportunities in hard-to-reach areas, the policy lacks clarity on the criteria for identifying these zones and how they will be differentiated in urban and rural settings. The policy does not provide a clear framework for determining the key factors involved.

UPSHOTS OF NEP 2020

The NEP 2020 mandates the establishment of Multidisciplinary Education and Research Universities that will be on par with the renowned IITs and IIMs. These universities are designed to introduce a multidisciplinary academic approach. The

same accreditation and regulatory standards will apply to both public and private educational institutions. Colleges will gradually move towards autonomy and away from affiliations. By 2030, a four-year B. Ed degree will be a prerequisite for individuals pursuing a career in teaching. To better prepare students for potential future pandemics, online learning will be encouraged on a larger scale.The outcomes of new education policy are as fallows:

- Achieving universal access to quality education from early childhood care and education (ECCE) to secondary education by the year 2030, in line with the Sustainable Development Goal 4 (SDG4).
- Implementing a National Mission by 2025 to ensure that all children acquire foundational learning and numeracy skills.
- Ensuring 100% Gross Enrollment Ratio (GER) in pre-school to secondary level education by the year 2030.
- Confronting the challenge of out-of-school children and endeavoring to reintroduce a significant number of 20 million children back into the educational framework.
- Equipping teachers with the necessary skills and knowledge to adapt to assessment reforms by the year 2023.
- Establishing an inclusive and equitable education system by the year 2030, where every child has equal access to education regardless of their background or abilities.
- Introducing board exams that assess not only the memorization of facts but also the understanding and application of core concepts.
- Ensuring that every child who completes their schooling is proficient in at least one skill.
- Implementing common standards of learning in both public and private schools to ensure quality education for all students.

CONCLUSION

Inclusive education aims to bridge the gap between students with special educational needs and those without, fostering the development of social interaction skills among special needs students through exposure to a diverse social environment while eliminating the necessity for special schools. Despite its noble intentions, inclusive education encounters various challenges in practice today. A recent study in the Swedish special education context delves into special educators' experiences, opportunities, and obstacles in implementing inclusive pedagogy in the context of social justice. The study highlights positive attitudes towards inclusive classrooms, yet also identifies several areas of ambiguity that must be addressed to establish socially and cognitively inclusive learning environments. The primary obstacles to inclusive education include special educational needs, attitudinal

barriers, curriculum design, untrained teachers, and infrastructural limitations. The successful implementation of inclusive education hinges on the active participation of school management, administrators, teachers, and parents of both typical and differently abled children. Embracing inclusive education is crucial in fulfilling our constitutional obligations and nurturing responsible citizenship and self-reliance in the modern educational landscape.

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COMPARATIVE STUDY OF SELECTED EXERCISES ON STRENGTH OF RURAL AND URBAN BOYS

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ABSTRACT

Strength is an essential component of physical fitness. The purpose of the study is to test the improvement of the Strength of rural and urban boys after 8 weeks of selected exercise treatment. The subject was randomly selected from the age group of 18–21 years. Total subjects were 80. They were divided into two groups. One is control and another one is experimental. The strength was measured by Standing Broad Jump. For statistical analysis, 't' test was used and level of significance was determined at 0.05 level and 0.01 level.

Keywords: Strength, Exercise Treatment, Rural and Urban boys.

INTRODUCTION

Physical exercises are principal means of training. Without physical exercises the sports training can not lead to improvement in sports performance. Physical exercises have direct effects on performance capacity. Exercises are used to prevent injury to improve performance and psychological preparation for any kind of physical activity. Fitness can be described as a condition that helps us for better look, pleasant feel and do our best. According to Nixon (1964) – "Physical fitness refers to the organic capacity of the individual to perform the normal task of daily living without under tiredness or fatigue having reserves of strength and energy available to meet satisfactorily any emergency demands suddenly placed upon him".

Physical fitness is to the human body what fine tuning is to an engine. It enables us to perform up to our potential. It can be described as a condition that helps us look, feel and do our best. Physical fitness involves the performance of the heart and lungs, and the muscles of the body. Play is a very old method of performing spontaneous and random muscular movement from a smaller creature to well developed animals. Such spontaneous and natural muscular actions comprise of fun, recreation and satisfaction. Play is involved with physical exercises and physical fitness components. Human beings of all ages need exercise in order to enjoy a full measure of health. Along with balanced diet, physical exercise plays a vital role in achieving a long disease-free life. Regular physical activity is proven to help preventing and manage no communicable diseases such as heart disease, stroke,

diabetes and several cancers. It also helps prevent hypertension, maintain healthy body weight and can improve mental health, quality of life and well-being.

The relative independence of strength and speed, however suggests that if some kind of weight training is given preparatory to athletic performances which require rapid movements, training should include movement which although "overloaded" could be rapid and similar in quality to those desired in the sports skill.

Studies on age-related changes in balance control have shown changes in the neuro-muscular response characteristics including decreased muscle strength, a slowing of response latencies, occasional disruption in response organization, and an increased co-activation of agonist and antagonist muscles when responding to threats to balance. In addition, older adults show more problems than young adults when balancing under conditions in which sensory inputs were reduced in walking speed and in stride length, with an increased double support phase. This was accompanied by increases in co-activation of muscles around the ankle joint.

Strength measurement, as expressed in terms of distance through which the body of an object is propelled in the space. Those tests involve both force and velocity. Other factors also influence testing results. But force and velocity are not measured as such, the measure is based on the distance (in unit) in strength measurement. The researcher had taken a standard test of Standing Broad Jump for strength to development of rural and urban boys.

METHODOLOGY

The total subjects of this study were 80 boys from Santipur College and their age group were ranging from 18–21 years of forty boys from rural areas and the same from urban areas had been randomly selected of the study.

a) Criteria Measured: The personal data age (year), height (cm.) and weight (kg) were measured by date of birth certificate, Stadiometer and weighing machine. Strength was measured by Standing Broad Jump. In this test, the total distance was measured in meter for each of them.

b) Practice Schedule: The period of treatments was 8 weeks and each group practiced three days in a week and duration was one hour per day at 3.30 pm to 4.30 pm.

Chart 1: Weekly Training Schedule

Day	Time	Duration	Procedure
Monday	3.30 pm.–3.45 p.m.	15 min.	Warm up with jogging, loosening exercises, striding, stretching, exercises, wind sprint.
	3.45 p.m.– 4.15 p.m.	30 min.	1) Run – 100 m. × 3 2) Sit up – 50 times × 3 3) Shuttle Run – 20 m × 3 4) Run with weighty jacket – 50 m × 3
	4.15 p.m.– 4.30 p.m.	15 min.	Cooling down.
Wednesday	3.30 pm.– 3.45 p.m.	15 min.	Warm up with jogging, loosening exercise, striding stretching exercises, wind sprint
	3.45 p.m.– 4.15 p.m.	30 min.	1) Walking & Running – 200 m × 3 2) Shuttle Run – 20 m. × 3 3) Jig Jag – 50 m. × 3 4) Hoff Step Jump – 10 times × 3 5) Sit up – 50 times × 2
	4.15 p.m.– 4.30 p.m.	15 min.	Cooling down.
Friday	3.30 pm.– 3.45 p.m.	15 min.	Warm up with jogging, loosening exercise, striding stretching exercises, wind sprint
	3.45 p.m.– 4.15 p.m.	30 min.	1) Shuttle Run – 20 m × 3 2) Jumping on ground – 20 times × 3 3) Run with weighty jacket – 50 m. × 3 4) Hoff Step Jump – 10 times × 3 5) Sit up – 50 times × 2
	4.15 p.m.– 4.30 p.m.	15 min.	Cooling down

DISCUSSION AND RESULT

Table 1: Comparison of Strength of Experimental Pre Test and Control Pre Test of 18 – 21 years rural and urban boys and

	Variables	Expt. Pre test Mean ± SD	Control Pre test Mean ± SD	SE_D	Obtained 't' value
Rural	Boys	2.02 ± 0.17	2.01 ± 0.17	0.05	0.17 NS
Urban	Boys	1.94 ± 0.17	1.93 ± 0.17	0.05	0.18 NS

NS is Not Significant.

From Table 1, it was observed that the mean ± SD score of Strength of 18– 21 years expt. Pre-test and control pre-test of rural boys were 2.02 ± 0.17 & 2.01 ± 0.17 respectively and that of urban boys were 1.94 ± 0.17 & 1.93 ± 0.17 respectively. Both the 't' values were not significant.

Table 2: Comparison of Strength of Experimental Post Test and Control Post Test of 18 – 21 years rural and urban boys and

\	Variables	Expt. Post test Mean ± SD	Control Post test Mean ± SD	SE_D	Obtained 't' value
Rural	Boys	2.12 ± 0.18	2.02 ± 0.18	0.05	1.74NS
Urban	Boys	2.04 ± 0.18	1.92 ± 0.17	0.05	2.13*

*Sig. at 0.05 level, NS is Not Significant.

Table 2 indicated that the mean ± SD score of Strength of 18–21 years expt. post test and control post test of rural boys were 2.12 ± 0.18 & 2.02 ± 0.18 respectively. The 't' value for rural boys was 1.74 which was not significant. The mean ± SD score of Strength of 18–21 years expt. post test and control post test urban boys were 2.04 ± 0.18 & 1.92 ± 0.17 respectively. The t-value of urban boys was 2.13 which was significant at 0.05 level.

Table3: Comparison of Strength of Experimental Pre-test and Experimental Post-test of 18 – 21 years rural and urban boys and

	Variables	Expt. Pre test Mean ± SD	Expt. Post test Mean ± SD	SE_D	Obtained 't' value	Improvement Occurred
Rural	Boys	2.02 ± 0.17	2.12 ± 0.18	0.05	1.75 NS	4.95%
Urban	Boys	1.94 ± 0.17	2.04 ± 0.18	0.05	1.76 NS	5.15%

**Sig. at 0.01 level, *Sig. at 0.05 level, NS is Not Significant.

It was observed from Table–3 that the mean ± SD score of Strength of 18–21

years expt. Pre-test and expt. post-test of rural boys were 2.02 ± 0.17 & 2.12 ± 0.18 respectively and that of urban boys were 1.94 ± 0.17 & 2.04 ± 0.18 respectively. The t-values of rural boys and urban boys were 1.75 and 1.76, both were not significant. Improvement occurred in rural boys and urban boys were 4.95% & 5.15% respectively.

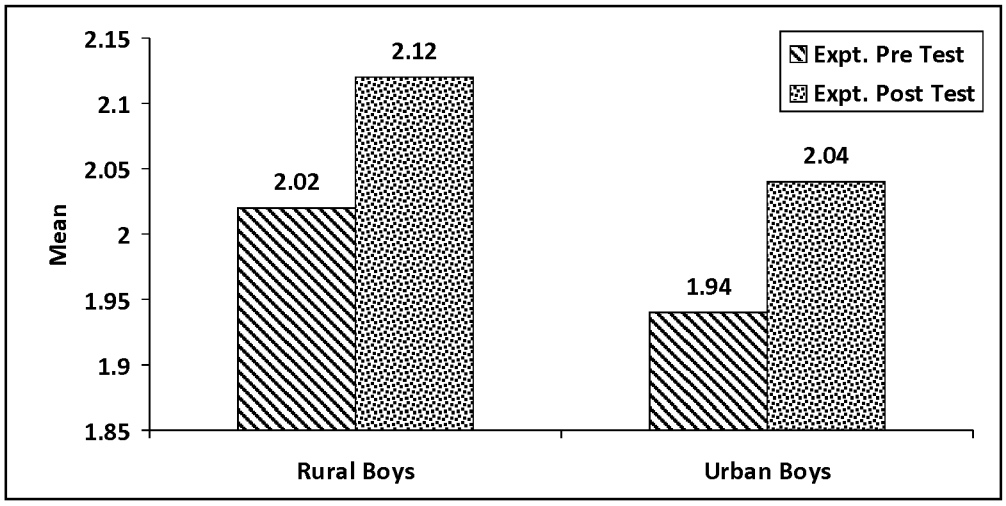

Fig. 1: Mean Score of Experimental Pre Test and Post Test of Rural and Urban Boys

Table 4: Comparison of Strength of Experimental Post Test of 18–21 years rural vs. urban boys

Variables	Expt. Post Test (Mean ± SD)		SE_D	Obtained 't' value
	Rural	Urban		
Boys	2.12 ± 0.18	2.04 ± 0.18	0.05	1.93 NS

**Sig. at 0.01 level, NS is Not Significant.

It was observed from Table 4 that the mean ± SD score of Strength of 18–21 years rural expt. Post-test rural and urban boys were 2.12 ± 0.18 & 2.04± 0.18 and t value was 1.93 which was not significant. It was indicated that expt. post-test mean scores of 18–21 years rural boys were higher than that of urban boys which implies better Strength of rural boys better than urban boys.

After eight weeks of exercise programme the strength has increased among 18–21 years boys at 0.01 and 0.05 level of significance.

CONCLUSION

This study concludes that the strength of 18–21 years rural and urban boys has improved significantly through the participation in exercise programme. This study also proves that the Strength of 18–21 years rural boys has improved more significantly in comparison to that of urban boys group after participating in exercise treatment.

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A STUDY ON PERSONAL VALUES AMONG HIGHER SECONDARY LEVEL STUDENTS IN KOLKATA DISTRICT

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ABSTRACT

Personal values, which guide our behaviour and decisions, are crucial for students' academic and personal growth. This study examines the personal values of higher secondary students in Kolkata District, looking at how gender and family type influence these personal values. We surveyed 250 students using the Personal Value Questionnaire (PVQ-DP, 2013) and analyzed the data with descriptive and parametric tests. The findings show that while male students have slightly higher personal values than female students but the difference was not statistically significant. Similarly, no major differences were found among the students who come from nuclear and joint families. These results highlight the strong cultural and educational influences in Kolkata, creating a consistent value system among students. Understanding these values is important for educators and policymakers to develop inclusive and effective educational strategies. By promoting values like honesty, responsibility, and respect, we can help all students thrive academically and personally.

Keywords: Personal values, Higher secondary students, Gender differences.

INTRODUCTION

Personal values are the core beliefs that shape how we think, behave, and make decisions (Rokeach, 1973). They reflect what we consider important and act as benchmarks for judging our actions and those of others (Schwartz, 1992). These values are influenced by our family, culture, education, and personal experiences, remaining fairly consistent over time and affecting everything from our daily routines to major life decisions (Hitlin & Piliavin, 2004). The study of personal values among higher secondary level students is gaining considerable attention due to its profound impact on their academic and personal growth (Schwartz, 2012). Personal values, which guide individuals' behaviors and decision-making processes, are especially crucial during adolescence—a time marked by identity formation and increasing independence (Rokeach, 1973). In Kolkata District, understanding these

values can offer valuable insights into the cultural and educational influences shaping the youth (Mukherjee, 2018).Values are essentially enduring beliefs about what is important in life, influencing how we act and make decisions (Rokeach, 1973; Schwartz, 1992). For students in higher secondary education, this stage represents a critical juncture where they make significant life choices, heavily influenced by their personal values (Eccles & Wigfield, 2002). Research shows that these values are shaped by various factors, including family, school environment, and broader societal norms (Hitlin & Piliavin, 2004).

Kolkata, with its rich cultural heritage and renowned educational institutions, presents a unique context where the values instilled in students may differ significantly from other regions (Ghosh, 2009). This regional specificity calls for a focused study to understand the unique value systems among Kolkata's youth. Previous research has highlighted that Kolkata's social and cultural context—a blend of traditional and modern influences—plays a crucial role in shaping students' values (Banerjee, 2011). Thus, this study aims to explore the personal values of higher secondary level students in Kolkata District, particularly it explores how these values are influenced by their socio-cultural environment and educational experiences.

Understanding the personal values of students in this demographic area can provide valuable insights for educators, policymakers, and parents (Feather, 1995). This understanding can aid in designing educational programs that resonate with students' values, thereby enhancing their engagement and motivation (Wigfield & Eccles, 2000). Additionally, recognizing the predominant values among these students can help address issues related to moral and ethical education, which are increasingly important in today's complex and rapidly changing world (Nucci, 2001). Therefore, this study seeks to contribute to the existing body of knowledge by providing a comprehensive analysis of the personal values among higher secondary level students in Kolkata District.

SIGNIFICANCE OF THE STUDY

Developing an understanding of the personal values of students at the higher secondary level in Kolkata District is crucial for various reasons. Personal values significantly influence students' behaviors, decisions, and overall development (Schwartz, 2012). Understanding these values enables educators and policymakers to develop impactful educational programs and interventions that are customized to address the distinct needs and values of these students (Eccles & Wigfield, 2002). Examining individual values with regard to gender is crucial as it illuminates potential disparities among male and female (Hitlin & Piliavin, 2004). Gender-specific analysis can inform the creation of educational methods that target any

discrepancies and guarantee that both male and female students receive the necessary assistance to flourish academically and personally (Rokeach, 1973). This can result in fairer educational results and contribute to gender parity in schools (Wigfield & Eccles, 2000). Furthermore, analyzing personal values in relation to family structure, such as nuclear or joint families, can provide insights into how family dynamics impact the formation of personal values (Schwartz, 1992). Understanding the dynamics of family can assist educators and counselors in providing more effective support to students by taking into account their family backgrounds, as family has a significant impact on the development of personal values (Ghosh, 2009). This study is especially noteworthy for its possible influence on moral and ethical education. Amidst the fast-paced and ever-evolving modern society, where students are exposed to diverse influences, it is crucial to strengthen their personal beliefs in order to provide guidance for their actions and choices (Nucci, 2001). By comprehending the prevailing principles held by these students, educators can incorporate teaching that is founded on values and is consistent with their cultural and social surroundings. This will encourage the growth of moral character and the practice of ethical conduct (Feather, 1995). Furthermore, this research can enhance the field of educational psychology by offering empirical evidence on the moral principles and beliefs of teenagers within a particular cultural context (Hitlin & Piliavin, 2004). This data is significant for making cross-cultural comparisons and gaining insights into how cultural and geographical factors impact the development of values (Schwartz, 2012). By enhancing global understanding of adolescent development, this can provide valuable insights for international educational practices and policy (Eccles & Wigfield, 2002). Studying personal values among higher secondary level students in Kolkata District is essential for enhancing educational practices, implementing gender and family-sensitive strategies, strengthening moral and ethical education, and gaining a deeper understanding of adolescent development in diverse cultural contexts.

DELIMITATIONS OF THE STUDY

I. The current study was delimited to only one district of West Bengal i.e., Kolkata.
ii. The present study was delimited to only 250 higher secondary level students who were considered as a sample.
iii. The present study was delimited to only two independent or demographic variable i.e., gender and family type.
iv. Only descriptive and parametric tests were used to show the real nature of the data and the research process.

OBJECTIVES OF THE STUDY

1. To know the current status of personal value among higher secondary level

students in Kolkata district.
2. To examine the personal values among students concerning gender.
3. To examine the personal values among students concerning family type.

HYPOTHESES OF THE STUDY

H01: There exists no significant mean difference in personal values among students by gender.

H02: There exists no significant mean difference in personal values among students by types of family.

METHOD

The main purpose of the study is to find out the present state of personal value among higher secondary level students in Kolkata district of West Bengal. To achieve the objective of this study, a cross-sectional survey design was employed. The population of the study consisted of higher secondary school-going adolescents in Kolkata district, West Bengal, and only 250 samples of higher secondary school-going adolescents were randomly selected. In this study, personal value was regarded as the dependent variable, which was demographic or independent variable such as gender and types of family.

TOOLS USED FOR DATA COLLECTION

The personal value Questionnaire (PVQ-DP, 2013) developed by Dr. Archana Dubey and Mahendra Patidar's is highly reliable and standardised multilingual measuring tools were utilised to assess personal values among higher secondary level students. This tool has 30 items with three (3) options, in total 90 options.

RESULTS

Descriptive Statistics

Table 1: Descriptive statistics representing personal values on basis of their gender.

Independent Variables	*Category*	*Number of Students*	*Mean*	*Sd*
Gender	Male	121	94.1	5.19
	Female	129	94.0	4.97
Types of Family	Nuclear Family	122	92.0	5.50
	Joint Family	128	92.0	4.58

Figure 1: Showing gender wise mean distribution.

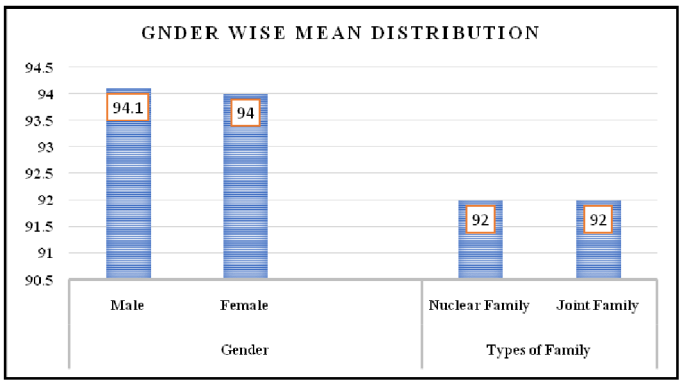

Table 1 and figure 1 show that the mean score of gender and types of family concerning personal values among students. Gender wise mean score of male students (m= 94.1) have showed higher personal values than the mean score of male students (m= 94). On the other hand, the mean scores of personal values of the students from nuclear and joint family suggests that, on average, the type of family does not have significant impact students' performance.

Hypothesis Testing

Figure 2 : Representing Independent sample t-test based on gender.

Dependent Variable	*Independent Variable*	*t*	*Std. error Diff.*	*df*	*P-value*	*Remarks*
Personal Value	Gender	0.114	0.643	248	0 .909	*NS > 0.05
	Types of Family	1.57	0.639	248	0.118	*NS P> 0.05

*NS= Not Significant

Table 2 shows the computed value of the independent samples t-test comparing the mean scores of gender and types of family among students with respect to personal values. Gender wise personal values were found to be statistically not significant [t (248) = 0.114, p>0.05] and the null hypothesis was failed to reject. On the other hand, types of families were to be statistically not significant [t (248) = 1.57, p>0.05] and the null hypothesis was failed to reject. Therefore, it can be said that the found difference in the mean scores was due to random chance factor.

MAJOR FINDING

1. The present status of personal values among higher secondary level students in Kolkata district was found to be 94.02.
2. Male students showed higher personal values than female students but the differences were found to be statistically not significant.
3. Students who come from nuclear and joint family both are average personal values but the differences were found to be statistically not significant.

DISCUSSION AND CONCLUSION

The analysis of personal values among students revealed significant insights into their current status and variations based on gender and family type. Firstly, the overall mean values indicate a consistent pattern of personal values across the student population, suggesting a shared cultural and educational influence prevalent in Kolkata.

The main focus area of the present study was to investigate the current state of personal values among higher secondary level students in Kolkata district with special reference to gender and types of family. Findings of the study showed that male students showed higher personal values than female students, similar results were found in several other researches also (Luciani et al., 2020; Tunc et al., 2018; Fatoki, 2016; Ardenghi, 2021). Male students have shown stronger personal values than female students because cultural expectations and social norms often emphasize traditional male roles. This can lead to a greater focus on values like responsibility and discipline for males. Again, result revealed that there was no significant difference of gender and types of family among students in personal values, similar results were found in different researches (Prince-Gibson, 1998; Batz-Barbarich, 2018).

In conclusion, the study on personal values among higher secondary students in Kolkata District shows that male students have slightly higher personal values than female students, but the difference isn't significant. Similarly, students from nuclear and joint families show no major differences in their values. These results highlight the strong cultural and educational influences in Kolkata that create a consistent value system among students. For educators and policymakers, this understanding is crucial for developing inclusive educational strategies that support all students. Emphasizing on shared values like honesty, responsibility, and respect can help every student to get success both academically and personally.

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EXPLORING PHOTOMATH: A DIGITAL SOLUTION FOR MATHEMATICS EDUCATION

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ABSTRACT
In the context of advancing digital tools in education, Photomath stands out as an innovative application for enhancing mathematics learning. This review article aims to explore the features of Photomath, describe its usage, examine its integration into teaching practices, and assess its impact on mathematical problem-solving. Results indicate that Photomath provides effective step-by-step solutions, improves learners' understanding, and supports teachers in creating interactive learning experiences. Photomath significantly enhances mathematics education, offering both students and teachers a powerful tool for improving mathematical problem-solving skills and personalized learning ability.

Keywords: Photomath, Mathematics Education, Digital Learning Tools

INTRODUCTION
Now it is not the time for us to struggle with difficulties of Mathematics. Simply use apps! Mathematics is considered to be the queen of science. Mathematics is inextricably linked to almost every aspect of life (Vergnaud, 2020). Digital technologies that support the teaching and learning of mathematics have attracted a lot of persons' interest as technology makes easier the learning of mathematics. One of these technologies is a smartphone application called Photomath, which lets users solve mathematical problems by only scanning them with their phone's camera. Since its launch in 2014, Photomath has grown to become a popular tool for teachers and students alike. It provides step-by-step instructions and answers to a wide range of mathematical issues, from simple algebra to advanced arithmetic (Hartono, 2019). With its ability to make learning more dynamic and accessible, this program has the potential to completely transform mathematics education. The reason Photomath is so popular because of its easy-to-use interface and quick response. Students who struggle with traditional methods of studying mathematics are among the diverse audience members served by the app. According to Boonchoowong and Boonprajak (2021), the utilization of a visual and interactive method facilitates the comprehension and memory of abstract concepts by learners. Photomath's step-by-step solutions assist pupils not only to identify and fix their mistakes but also develop

their ability to learn independently and confidently solve mathematical problems (Saundarajan et al., 2020). Using Photomath in the classroom requires thoughtful planning. Although it is a useful tool for individualised learning, how well teachers use it in the classroom will determine how effective it is. The software can be used as a supplement conventional teaching strategies, increase student engagement, and give students who require more support and help (Webel & Otten, 2015). Some instructors worry that pupils may become overly reliant on technology and so impair the development of critical thinking and problem-solving skills if they rely too much on Photomath (Natal'ya & Kharitonova, 2021).Teachers can recommend specific problems for individual students to solve using the app, tailored to their learning needs (Webel & Otten, 2015).Teachers can then review the solutions in real-time, identify areas of difficulty, and provide immediate feedback to guide student learning (Igcasama et al., 2020). Photomath can be integrated with interactive whiteboards, online learning platforms, or educational apps to provide a seamless learning experience for students (Vergnaud, 2020). Natal'ya & Kharitonova (2021) believes that integrating Photomath into classroom teaching empowers educators to leverage technology effectively, promote active learning, and support student success in mathematics. According to Hartono (2019), the application supports the development of 21st-century mathematics skills by facilitating the learning of complex problems, such as two-variable linear equations. Boonchoowong and Boonprajak (2021) observed that Photomath positively influences instructional management by enabling students to independently tackle mathematical problems, thus fostering self-reliance and confidence. On the other hand, concerns have been raised about the potential overreliance on Photomath, which could hinder the development of critical thinking and problem-solving skills if students become too dependent on the app for answers (Natal'ya & Kharitonova, 2021). Zain et al. (2023) shows that Photomath serves as a valuable learning tool by offering detailed explanations for each step of the solution. Photomath promotes independent learning and self-paced study. Students can use the app to practice solving mathematical problems at their own convenience, without the need for constant supervision or assistance. This flexibility empowers students to take ownership of their learning journey, building confidence and resilience in tackling mathematical problems (Young, 2015). According to Hamadneh (2015) Photomath facilitates personalized learning experiences by adapting to the individual needs and abilities of each user. Sloan-Lynch et al. (2022) point out that the impact of Photomath on mathematics problem-solving extends beyond providing answers, it promotes critical thinking, conceptual understanding, and independent learning, ultimately empowering students to become more proficient and confident mathematicians.

Recognizing the increasing integration of technology in educational settings,

the researchers aim to investigate how Photomath can support both students and teachers in understanding and teaching mathematical concepts. The paper seeks to assess the app's effectiveness in improving student engagement, comprehension, and problem-solving skills, while also examining its impact on teaching practices. By analyzing various studies and practical applications of Photomath, the researchers intend to provide insights into its benefits, and overall influence on modern mathematics learning.

OBJECTIVES OF THE STUDY

The following objectives were taken for the present inquiry-

O1: to explore the features of the Photomath application.
O2: to describe how to use Photomath effectively.
O3: to examine how teachers can integrate Photomath into their teaching practices.
O4: to assess the impact of Photomath on mathematics problem-solving.

SIGNIFICANCE OF THE STUDY

The findings of the study will help-

i) to know what Photomath is. A clear conception about Photomath will be developed.
ii) to understand the steps of using Photomath, to use the idea practically and solve any mathematical problems effectively.
iii) to know how teachers can integrate Photomath as a teaching strategy with traditional teaching methods in mathematics class and enhance mathematics learning among students.
iv) to know the impact of Photomath in mathematics problem-solving, critical thinking about math, conceptual mathematical understanding, independent learning and ultimately empowering students to become more proficient and confident mathematicians.

METHODOLOGY

Data was gathered through a systematic literature search in technology and mathematics education journals, including scientific articles, books, and websites. Keywords used included "how to use Photomath", "Photomath","impact of Photomath" and "application of Photomath". Secondary data from publications between 2015 and 2024 were critically analyzed and interpreted to address the research questions arisen from the objectives of the study. The findings of the studied literature were systematically analyzed and described into a descriptive qualitative report highlighting the impact of Photomath on mathematics education.

ANALYSIS & INTERPRETATION

The following analysis and interpretation are enumerated below out of systematic literature review about the present topic.

1. Photomath is a mobile application designed to revolutionize mathematics learning. Utilizing advanced camera technology, the app allows users to point their device's camera at a math problem, whether handwritten or printed, and instantly receive step-by-step solutions. Beyond providing answers, photomath offers detailed explanations, helping users understand the underlying concepts. This comprehensive approach covers various mathematical topics, from basic arithmetic to complex calculus, making it suitable for students at all levels. Moreover, photomath includes interactive graphs, additional learning resources, and the ability to scan multiple problems at once, enhancing the overall learning experience. Its user-friendly interface and accessibility have made it a popular choice among students, teachers, and parents, transforming the way mathematics is learned and taught (https://photomath.com).

2. Photomath is a valuable tool for mathematics learners of all levels which is very much user-friendly and straightforward in nature. The steps for utilizing Photomath effectively are as follows:

i) Open the App: Launch the Photomath application on your mobile device.

ii) Capture the Problem: Use the camera function to capture a clear image of the math problem you want to solve. The problem may be handwritten or printed.

iii) Scan and Process: Photomath will automatically analyze the problem and generate a solution. It utilizes advanced algorithms to interpret and solve mathematical expressions accurately.

iv) View Solution: Once processed, Photomath will display the solution step-by-step, providing detailed explanations for each step. Users can navigate through the solution to understand the problem-solving process.

v) Interact with Solutions: Users can interact with the solutions provided, exploring additional details, graphs, and relevant concepts.

vi) Practice and Learn: Photomath offers a learning mode where users can practice solving similar problems and deepen their understanding of mathematical concepts.

By following these simple steps, students can leverage Photomath to enhance their mathematics learning experience effectively.

3. Integrating Photomath into classroom teaching can enhance student engagement, facilitate personalized learning, and streamline the teaching process. Here's how educators can effectively incorporate Photomathinto their teaching strategies:

i) Flipped Classroom Approach: Implement a flipped classroom model by assigning Photomath tutorials or instructional videos as homework. This allows students to learn at their own pace and frees up valuable class time for interactive discussions,

problem-solving activities, and individualized support.

ii) Homework Assistance: Assign homework problems and encourage students to use Photomath as a tool to check their work. This empowers students to take ownership of their learning process while providing instant feedback on their solutions. Teachers can then review common mistakes or misconceptions during class discussions, reinforcing concepts as needed.

iii) Differentiated Instruction: Recognizing students having different levels of mathematical proficiency, Photomath can be used to provide personalized support to students who may be struggling with certain concepts.

iv) Real-Time Assessment: Use Photomath as a formative assessment tool to gauge students understanding during lessons. Encourage students to use the app to solve problems and submit their solutions electronically. Thus, teacher can assess students in live classroom setting and identify areas of difficulty, and provide immediate feedback to the students.

v) ***Integration with other Tools:*** Combine Photomath with other educational technologies and resources to create a comprehensive learning environment. Interactive whiteboards, online learning platforms, or educational apps along with Photomath are very much helpful to provide a seamless learning experience for students.By incorporating Photomath into their teaching practices, educators can foster a collaborative and dynamic learning environment that maximizes student engagement and achievement.

4.The impact of Photomath on mathematics problem-solving has been profound, reshaping the way of students approach and understand mathematical concepts. Firstly, Photomath provides immediate access to step-by-step solutions for a wide range of mathematical problems, from basic arithmetic to complex calculus. This instant feedback enables students to quickly identify and correct errors, fostering a deeper understanding of the problem-solving process. It not only helps students arrive at the correct answer but also provides insights into the underlying principles and techniques used to solve the problem. By engaging with these explanations, students can reinforce their understanding of key mathematical concepts and develop problem-solving strategies that can be applied to future challenges.The mobile application (App) on Photomathoffers a variety of features, such as interactive graphs and additional resources, to cater to different learning styles and preferences. This customization enhances engagement and motivation, leading to more effective learning outcomes.

FINDINGS

i)The study explored that Photomath is highly effective in enhancing students' understanding of mathematical concepts. Its step-by-step solutions allow users to

grasp complex problems and develop independent problem-solving skills. The app's user-friendly interface and instant feedback significantly contribute to improve student engagement.

ii) By integrating Photomath into their teaching practices, educators can offer differentiated instruction and real-time assessments, tailoring lessons to meet the diverse needs of students.

iii) The study shows that Photomath positively influences students' learning outcomes. Students using Photomath demonstrated better comprehension of mathematical concepts, reduced errors, and increased confidence in solving problems independently.

iv) Despite its benefits, the study highlights concerns regarding the potential overreliance on Photomath. There is a risk that students may become dependent on the app, leading to a reduction in critical thinking and mathematical problem-solving abilities if not used judiciously.

v) Photomath's personalized approach including interactive graphs and additional resources, enhances engagement and motivation of the learners in mathematics, leading to more effective learning outcomes.

vi) The study suggests that future research should focus on optimizing the balance between technology use and traditional teaching methods to maximize learning outcomes.

CONCLUSION

Photomath is a disruptive force in mathematics education, revolutionizing problem-solving strategies. It improves comprehension and encourages autonomous learning by providing fast solutions, extensive explanations, and personalized learning elements. Its use should be planned in order to properly enhance traditional teaching approaches. Photomath shows technology's ability to empower students regarding mathematics teaching.

SUGGESTIONS FOR FURTHER RESEARCH

The further study may be conducted to-

i) Investigate the long-term impact of Photomath on students' mathematical problem-solving abilities.

ii) Examine the orientation of the teachers in the successful integration of Photomath into classroom practices.

iii) Analyze the potential of Photomath to support students with learning disabilities in mathematics.

iv) Study the influence of Photomath on students' critical thinking and reasoning skills irrespective of any discipline.

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MINDFUL TRANQUILITY: BRIDGING ANCIENT WISDOM AND MODERN SCIENCE IN EXPLORING THE IMPACT OF MINDFULNESS MEDITATION ON MENTAL WELL-BEING AND STRESS REDUCTION

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ABSTRACT

This research delves into the transformative influence of mindfulness meditation, grounded in the rich tapestry of Buddhist teachings, on the realms of mental well-being and stress reduction. By amalgamating insights from ancient Buddhist principles with contemporary scientific studies, this paper rigorously explores the intricate mechanisms underlying how mindfulness meditation exerts positive effects on cognitive and emotional processes.

Keywords: Mindfulness, Mental Well-being, Stress Reduction, Buddhism

INTRODUCTION

Modern psychology is showing more interest in mindfulness practices because they can help people feel better and reduce stress. This research embarks on an exploration of the profound influence of mindfulness meditation, firmly rooted in the timeless teachings of Buddhism. By synthesizing ancient wisdom with contemporary scientific studies, we aim to unravel the intricate mechanisms through which mindfulness meditation positively shapes cognitive and emotional processes.

CONTEXTUALIZING MINDFULNESS IN BUDDHISM

Mindfulness, as practiced in Buddhism, is not merely a contemporary trend but a timeless tradition deeply embedded in the philosophy and teachings of this ancient tradition. From the earliest Buddhist scriptures to the intricate sutras, mindfulness emerges as a thread woven into the fabric of spiritual practice. Understanding the historical foundations of mindfulness in Buddhism is essential for appreciating its authenticity and cultural richness.

PHILOSOPHICAL UNDERPINNINGS

The concept of mindfulness in Buddhism is grounded on a profound philosophy that extends beyond the superficial aspects of meditation. The teachings emphasize present-moment awareness, compassion, and the cultivation of a deep understanding of the nature of existence. Exploring these philosophical underpinnings provides a holistic view of how mindfulness transcends the reductionist gaze of contemporary science.

INTERSECTION WITH CONTEMPORARY SCIENCE

The marriage of ancient Buddhist principles with contemporary scientific studies forms a unique intersection that enriches our understanding of mindfulness. As scientific methodologies delve into the neuro-scientific and psychological dimensions of mindfulness meditation, there emerges a bridge between tradition and empirical evidence. This synergy invites us to examine not only the historical roots but also the practical implications of mindfulness in our modern, fast-paced world.

RESEARCH OBJECTIVES

This research sets out with the primary objective of unraveling the mechanisms through which mindfulness meditation, as inspired by Buddhist teachings, positively influences cognitive and emotional processes. By scrutinizing both historical wisdom and empirical findings, we seek to provide a comprehensive understanding of how mindfulness serves as a catalyst for enhanced mental well-being and stress reduction.

As we embark on this exploration, the aim is not only to shed light on the intricacies of mindfulness but also to contribute to a broader conversation on the integration of ancient wisdom into contemporary practices, fostering a holistic approach to mental health and well-being. Through a meticulous examination of historical roots and scientific insights, this research seeks to bridge the gap between tradition and modernity, offering valuable insights for both scholars and practitioners alike.

HISTORICAL FOUNDATIONS OF MINDFULNESS IN BUDDHISM

The historical roots of mindfulness in Buddhism can be traced back to the foundational teachings of Siddhartha Gautama, the historical Buddha, around 2,500 years ago. The concept of mindfulness is intricately woven into the Four Noble Truths and the Eightfold Path, which form the core of Buddhist philosophy.

1. Early Buddhist Texts

Pali Canon: The earliest Buddhist scriptures, known as the Pali Canon, contain numerous references to mindfulness. Discourses such as the Satipatthana Sutta and

the Anapanasati Sutta provide detailed instructions on mindfulness meditation, highlighting its central role in the path of enlightenment.

2. The Four Foundations of Mindfulness

Satipatthana Sutta: This discourse, considered one of the most important in the Pali Canon, outlines the Four Foundations of Mindfulness—mindfulness of the body, feelings, mind, and mental objects. It serves as a comprehensive guide to cultivating mindfulness in various aspects of daily life.

3. Mindfulness as a Path to Liberation

From the historical perspective, mindfulness in Buddhism is not a mere tool for stress reduction but a profound method for understanding the nature of existence and achieving liberation (nirvana). Mindfulness is depicted as a transformative practice leading to insight into the impermanent, unsatisfactory, and selfless nature of all phenomena.

4. Integration into Monastic Practices

Monastic communities played a pivotal role in preserving and transmitting mindfulness practices. Monks and nuns engaged in rigorous meditation practices, fostering a culture where mindfulness was not only taught but lived on a daily basis.

5. Spread of Buddhism and Cultural Adaptations

As Buddhism spread to different regions, various cultural adaptations occurred. Mindfulness practices manifested in diverse forms, incorporating local traditions and expressions while maintaining the essence of awareness and presence.

6. Zen and Chan Buddhism

In East Asian traditions like Zen (Japan) and Chan (China), mindfulness takes on an unique expression. Practices such as zazen emphasize direct experience and intuitive insight, reflecting an adaptation of mindfulness within the cultural and philosophical contexts of these regions.

The historical foundations of mindfulness in Buddhism are deeply embedded in the teachings of the Buddha, preserved in ancient scriptures, and propagated through monastic traditions. The evolution and adaptation of mindfulness across various Buddhist schools and cultural landscapes underscore its enduring relevance as a transformative practice for understanding the nature of the mind and reality.

SCIENTIFIC STUDIES ON MINDFULNESS MEDITATION

The intersection of ancient Buddhist mindfulness practices with contemporary scientific inquiry has given rise to a wealth of empirical studies examining the psychological and neuroscientific effects of mindfulness meditation.

These studies provide a nuanced understanding of how mindfulness impacts cognitive and emotional processes.

1. Neuroplasticity and Brain Changes

Structural Changes: Neuroimaging studies, including fMRI and MRI scans, reveal structural changes in the brain associated with mindfulness meditation. Areas linked to attention, emotional regulation, and self-awareness, such as the prefrontal cortex and hippocampus, often show increased grey matter density.

Functional Connectivity: Research explores how mindfulness affects functional connectivity between different brain regions. Enhanced connectivity between the default mode network (DMN) and areas related to attention suggests a potential mechanism for reduced mind-wandering and increased present-moment awareness.

2. Attention and Cognitive Functioning

Focused Attention: Studies employing attentional tasks demonstrate that mindfulness meditation cultivates heightened levels of focused attention. This enhanced attentional control is associated with improved cognitive performance in tasks requiring sustained focus.

Working Memory: Mindfulness has been linked to improvements in working memory, with research indicating that regular meditation practice may enhance the capacity to hold and manipulate information in the short term.

3. Emotional Regulation and Stress Reduction

Reduced Amygdala Activation: Mindfulness has been found to modulate activity in the amygdala, a key brain region involved in emotional processing. Reduced amygdala activation is associated with decreased reactivity to emotional stimuli, suggesting an enhanced ability to regulate emotions.

Stress Reduction: Numerous studies explore the impact of mindfulness-based interventions on stress reduction. Mindfulness-Based Stress Reduction (MBSR) programs, rooted in mindfulness meditation, have demonstrated effectiveness in reducing perceived stress and improving overall mental well-being.

4. Mindfulness-Based Interventions in Clinical Settings

Clinical Applications: Scientific investigations extend into clinical settings, examining the efficacy of mindfulness-based interventions for various mental health conditions. Research supports the use of mindfulness for alleviating symptoms of anxiety, depression, and chronic pain.

5. Individual Differences and Adherence

Personality and Individual Differences: Studies explore how individual differences, such as personality traits and baseline cognitive abilities, may influence

the outcomes of mindfulness interventions.

Adherence and Long-term Effects: Longitudinal studies examine the role of adherence to mindfulness practice and explore sustained effects over time, shedding light on the long-term benefits of incorporating mindfulness into one's lifestyle.

The scientific exploration of mindfulness meditation encompasses a broad spectrum of research, ranging from neuroplasticity and brain changes to practical applications in clinical settings. This body of evidence contributes to our understanding of the tangible effects of mindfulness on the mind and brain, bridging ancient wisdom with contemporary scientific rigor.

MECHANISMS OF MINDFULNESS MEDITATION

Understanding how mindfulness meditation positively influences cognitive and emotional processes involves delving into its underlying mechanisms. The following details elaborate on key aspects of these mechanisms:

1. Attentional Control

Enhanced Focus: Mindfulness meditation involves training attention to remain anchored in the present moment. This practice enhances selective attention, allowing individuals to sustain focus on a chosen object or stimuli, contributing to heightened cognitive control.

Reduced Mind-Wandering: Through practices like mindful breathing or body scan, individuals learn to redirect attention when the mind begins to wander. This reduction in mind-wandering is associated with improvements in overall attentional stability.

2. Heightened Awareness

Present-Moment Awareness: Mindfulness cultivates an acute awareness of the present moment, discouraging dwelling on the past or anticipating the future. This heightened present-moment awareness contributes to a deeper understanding of one's thoughts, emotions, and surroundings.

Non-Judgmental Observation: A crucial aspect of mindfulness is the cultivation of a non-judgmental attitude toward one's thoughts and experiences. By observing thoughts without attaching judgments, individuals develop a more objective and accepting perspective.

3. Emotional Regulation

Mindful Emotion Processing: Mindfulness practices involve observing emotions without immediate reaction. This non-reactive stance contributes to improved emotional regulation, reducing impulsivity and promoting a more

measured response to emotional stimuli.

Deactivation of Amygdala: Neuroscientific studies suggest that mindfulness meditation can lead to decreases activation of the amygdala, a key brain region associated with emotional processing. This may contribute to a reduced emotional reactivity to stressors.

4. Changes in Brain Structure and Function

Neuroplasticity: Mindfulness meditation has been linked to structural changes in the brain, including increased grey matter density in regions associated with self-awareness, compassion, and cognitive processing.

Default Mode Network (DMN): Mindfulness is associated with alterations in the functional connectivity of the DMN, which is active during mind-wandering and self-referential thinking. Reduced activity in the DMN is linked to decreased mind-wandering and increased present-moment awareness.

5. Mindfulness as a Cognitive Reappraisal Strategy

Cognitive Restructuring: Mindfulness encourages individuals to view thoughts and situations objectively, fostering cognitive reappraisal. This cognitive restructuring allows for a more adaptive interpretation of stressors and challenges.

Meta-Cognitive Awareness: Practitioners develop meta-cognitive awareness; an ability to observe and regulate one's thinking processes. This awareness enables individuals to step back from automatic thoughts and choose more intentional cognitive responses.

The mechanisms of mindfulness meditation encompass refined attentional control, heightened awareness, improved emotional regulation, neuroplastic changes, and a cognitive reappraisal strategy. The synergy of these mechanisms contributes to the transformative impact of mindfulness on mental well-being and stress reduction.

APPLICATIONS IN STRESS REDUCTION

The practical applications of mindfulness meditation for stress reduction extend across various contexts, from clinical settings to corporate environments. The following details elaborate how mindfulness is applied to alleviate stress:

1. Mindfulness-Based Stress Reduction (MBSR) Programs

Structured Programs: MBSR, developed by Jon Kabat-Zinn, is a well-established program that integrates mindfulness meditation with yoga and awareness practices. Participants engage in guided sessions, cultivating mindfulness

as a tool for stress management.

Clinical Effectiveness: MBSR has demonstrated clinical effectiveness in reducing stress-related symptoms in individuals facing chronic pain, anxiety, depression, and other health challenges.

2. Corporate Stress Management Programs

Workplace Wellness Initiatives: Many organizations incorporate mindfulness programs into their wellness initiatives to address stress among employees. Mindfulness practices are integrated into workplace culture to enhance resilience and improve overall mental well-being.

Mindful Leadership Training: Executives and leaders often undergo mindfulness training to develop skills in stress management, emotional intelligence, and decision-making under pressure. Mindful leadership fosters a healthier organizational culture.

3. Educational Settings

Mindfulness in Schools: Mindfulness programs have been introduced in educational settings to equip students with stress reduction tools. Techniques like mindful breathing and short meditation sessions are integrated into the school day, promoting emotional regulation and focus.

Stress Reduction for Teachers: Mindfulness is applied to reduce stress among educators. Teacher training programs often include mindfulness practices to manage the demands of the profession and improve overall job satisfaction.

4. Clinical Interventions for Anxiety and Depression

Complementary Therapies: Mindfulness-based interventions, such as Mindfulness-Based Cognitive Therapy (MBCT), are employed as complementary therapies for individuals dealing with anxiety and depression. These interventions emphasize cultivating mindfulness to interrupt negative thought patterns.

Stress Reduction Clinics: Specialized clinics offer mindfulness-based stress reduction programs as part of mental health treatment. These programs address a range of stress-related conditions and provide practical tools for coping with life's challenges.

5. Community-Based Initiatives

Mindfulness in Community Centers: Mindfulness classes are often offered in community centers, providing accessible stress reduction resources for diverse populations. These initiatives aim to promote mental well-being at the community

level.

Mindfulness Apps and Online Platforms: With the advent of technology, mindfulness apps and online platforms offer guided meditation sessions and stress reduction programs, making mindfulness accessible to individuals worldwide.

The applications of mindfulness in stress reduction span a diverse range of settings, emphasizing its versatility and adaptability. From clinical interventions to workplace initiatives and educational programs, mindfulness emerges as a powerful tool for cultivating resilience and promoting mental well-being in the face of stress.

CONCLUSION

In conclusion, the synthesis of ancient wisdom from Buddhist teachings with contemporary scientific research underscores the profound impact of mindfulness meditation on mental well-being and stress reduction. The exploration of historical foundations highlighted the timeless nature of mindfulness, while scientific studies illuminated its mechanisms, from neuroplastic changes to emotional regulation. Applications in diverse settings, from clinical interventions to corporate wellness programs, emphasize the versatility of mindfulness. This convergence of tradition and science not only provides valuable insights for present-day stress management but also invites continued exploration and integration of mindfulness into diverse aspects of human life.

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THE ATTITUDE OF TEACHER TRAINEES TOWARD CREATIVE TEACHING

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ABSTRACT

To develop the innate potentialities of students' teaching requires a variety of talents and can be made creative. Creative teaching involves the creation of novel teaching strategies and procedures; hence it requires constant work from the side of the teachers. Today's world is changing rapidly, so a teacher needs to create interesting lessons and impart knowledge efficiently to prepare students for the competitive world. The present paper is based on the attitude of B.Ed. and B.Ed. in special education trainees towards creative teaching. This study aimed to investigate the attitude of teacher trainees toward creative teaching regarding some variables- gender, stream of study, and type of B.Ed. program. This study was conducted on 120 teacher trainees. A purposive sampling technique was used. To study attitude, the Attitude Scale toward Creative Teaching (Shukla, 2012) was used. The data analysis revealed that there is no significant difference in the attitude of teacher trainees regarding their gender, stream of study, and type of B.Ed. program. Further investigations are recommended.

Keywords: Creative teaching, the attitude of teacher trainee, teacher education program.

INTRODUCTION

Today we are living in the age of technology and innovation. New things are constantly being discovered that are changing our lives radically. The things which we once imagined are slowly becoming reality. So, it has to be believed that there are people who turn their imagination into reality, they are called creative. Previously it was believed that creativity is present among very few individuals, like- Einstein, Picasso, Gandhi, etc. But this concept has changed, many researchers (Davies and Newton, 2018) have stated that like any other mental ability creativity is also present in every human being and it can be nurtured (Torrance, 1979). Like any other aspect of development, creativity also needs some supportive factors like- personal factors, intellectual factors, and environmental factors. The environmental factors include all the facilities in the school, the home, the climate of the school, the teaching strategy, and the attitude of the teachers toward teaching.

A positive attitude from the teacher is needed to develop the innate potential

of students. The attitude of an individual determines his/her interaction with the environment. The teaching efficiency of a teacher is significantly related to his attitude toward teaching (Narayanappa and Akthar, 2007). The favorable attitude of teachers toward teaching is very essential for the betterment of the education process. Even pupils' achievement is significantly related to teachers' attitudes toward teaching (Goyal, 1984). In the age of social media, students are getting distracted very easily. It is very important to keep their attention on study. The traditional lecture method has become weak. So, teachers should adopt a more comprehensive teaching strategy which will enhance creativity in teaching. Creative teaching is a process of flexible teaching where the teachers use imaginative approaches in the classroom to make learning more effective and interesting.

NEP, 2020 stated that the role of a teacher is very crucial because it shapes the future of our country by making human resources. So, they need continuous professional development (CPD). To make the teachers more efficient and professional, NCTE runs a teachers' training program throughout the country, which is known as B.Ed. However, a teacher training program is also run by the Rehabilitation Council of India (RCI) which is known as B.Ed. in special education., though the second one is especially for those who want to teach children with special needs. Whether it may be B.Ed. or B.Ed. in special education, the teacher trainee should have a positive attitude toward teaching. Students who are pursuing B.Ed. have different types of attitudes regarding creative teaching. Kumar (2013) reported that trainees who are from the science stream have shown more positive attitudes toward creative teaching than the trainees of the arts stream. Regarding gender, he noted that the attitude of female trainees was more positive than that of male trainees. However, Kaur (2015) did not find any significant difference in attitude between male and female teacher trainees toward creative teaching. However, he reported that the attitude of urban trainees and science stream trainees was significantly higher than rural and arts stream trainees respectively. Kaur (2016) included the trainees who are from the commerce stream in his study and tried to compare the attitude of arts, science, and commerce stream teacher trainees toward creative teaching. He found a significant difference in the attitude of arts, science, and commerce stream teacher trainees toward creative teaching.

After the rigorous literature review, the present investigator has noticed that most of the studies have considered the gender, locality, and stream of teacher trainees to study their attitude toward creative teaching. Therefore, the present investigator is interested in studying whether there is any significant difference in attitude between trainees who are pursuing B.Ed. in general education and those who are pursuing B.Ed. in special education.

OBJECTIVES

1. To find out the attitude of teacher trainee toward creative teaching.
2. To find out whether trainees of General B.Ed. program and trainees of B.Ed. in special education programs differ in their attitude toward creative teaching.
3. To find out whether male and female teacher trainees differ in their attitude towards creative teaching.
4. To find out whether trainees of the science stream and trainees of the arts stream differ in their attitude towards creative teaching.

HYPOTHESES

H0₁ Trainees of General B.Ed. program and trainees of B.Ed. in special education programs do not differ in their attitude toward creative teaching.

H0₂ Male trainees and female trainees do not differ in their attitudes toward creative teaching.

H0₃ Trainees of the science stream and trainees of the art stream do not differ in their attitude toward creative teaching.

METHODOLOGY

The Present investigator followed a quantitative research design. The survey method was used to assess the attitude of teacher trainees toward creative teaching. The survey was conducted in different teacher training institutes in Hooghly district, West Bengal.

Population

All the teacher trainees of Hooghly district are the population of the present study.

Sample

Sample is the representative of the population. A total of 120 trainees were selected from 5 teachers' training colleges of Hooghly district as the sample of the present study. For selecting the sample purposive sampling technique was used.

Variables

Independent variables

- Gender
- Stream of study
- Type of B.Ed. program

Dependent variable

Attitude toward creative teaching

Tool

To study the attitude of teacher trainees, the Attitude Scale of Creative Teaching was used (Shukla, 2012). This scale has 30 items. There are 7 negative items and 23 positive items. The test items numbered 1,5,10,15,20,25, and 30 are negative. The positive statements are to be evaluated as 5,4,3,2,1, and the negative statements as 1,2,3,4,5. The reliability of the scale is 0.67.

RESULTS

Table 1: t- the ratio between means scores of B.Ed. program's trainee and B.Ed. in special education program's trainee toward creative teaching

Group	*N*	*Mean*	*S.D*	*t-value*	*Level of significance*
B.Ed. trainee	60	107.50	6.85	0.334	Not significant
B.Ed.(spl) trainee	60	108.43	6.92		

From Table 1, it can be noted that the t value is not significant at the .05 level. This means there is no significant difference in the attitude of trainees who are pursuing B.Ed. and the trainees who are pursuing B.Ed. in special education programs. Hence, the hypothesis "Trainee of a B.Ed. program and trainee of a B.Ed. in special education program do not differ in their attitude toward creative teaching" is accepted.

Table 2: t-ratio between the mean score of male and female training toward creative teaching

Group	*N*	*Mean*	*S.D*	*t-value*	*Level of significance*
Male trainee	58	107.50	6.85	0.334	Not significant
Female trainee	62	108.43	6.92		

From table 2, it can be noted that the t value is not significant at the .05 level. This means there is no significant difference in the attitude of male and female teacher trainees. Hence, the hypothesis- "Male trainees and female trainees do not differ in their attitude toward creative teaching" is accepted.

Table 3: The 't' ratio between the means score of the art stream's trainee and the science stream's trainee toward creative teaching

Group	*N*	*Mean*	*S.D*	*t-value*	*Level of significance*
Arts Stream's trainee	67	106.56	6.78	0.383	Not significant
Science stream's trainee	53	107.72	6.23		

From table 3 it can be noted that the t value is not significant at the .05 level. This means there is no significant difference in the attitude of the art stream's trainee and the science stream's trainee toward creative teaching. Hence, the hypothesis, "Trainee of the science stream and trainee of the art stream do not differ in their attitude toward creative teaching" is accepted.

DISCUSSION

Teachers' attitude toward creative teaching is very crucial for the success of classroom learning. The present study reported that male and female teacher trainees showed almost the same attitude toward creative teaching. The present investigator did not find any significant difference in the attitude of male and female teacher trainees towards creative teaching. The same was found by Kour (2015) who did not find any significant difference in the attitude between male and female teacher trainees towards creative teaching. However, he reported that the attitude of urban students was significantly higher than the attitude of the rural students. Katoch (2016) conducted a study on the attitude of secondary school teachers toward creative teaching. He also noted that male and female teachers did not differ in their attitudes toward creative teaching. However, in his study, Kumar (2013) reported that female teacher trainees showed a more positive attitude than male teacher trainees toward creative teaching. In another study, female trainees got a higher score than male trainees on the Attitude Scale of Creative Teaching (Gupta and Jan, 2013).

In this study, the investigator has compared the attitude between the trainee of arts and the science stream. However, he did not get any significant difference in their attitude regarding the stream of study. But Kumar (2013) noted that teacher trainees in the science stream have shown a more positive attitude toward creative teaching than trainees in the art stream. Gupta and Jan (2013) also found that the attitude of science stream trainees was more positive than the attitude of art stream trainees toward creative teaching. The same was concluded by Kaur (2015).

The present investigator also made a comparison between the attitudes of trainees who are pursuing General B.Ed. and B.Ed. in special education. However, he did not find any significant difference in their attitude.

CONCLUSION

Teachers must make an effort to employ creative methods, because doing so helps them in various tasks like classifying students and evaluating their performance, creating timetables and calendars, giving kids quick feedback to improve interaction and motivation, etc. Creative teaching helps the teacher to deliver instructions and fulfill students' needs more efficiently. In Creative teaching, teachers feel more satisfied because they can teach better, and also, they are free to work and they collect a lot of information.

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ATTITUDE OF SECONDARY SCHOOL TEACHERS TOWARDS GENDER SENSITIVITY IN THE SCHOOLS OF KOLKATA

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ABSTRACT

Gender inequality in education has undergone many changes in the recent past. Gender sensitivity advocates for adjustment of behaviour by increasing awareness of issues related to gender equality. As an instrument of character building, teachers are the prime medium through which gender sensitivity can be established in society. The objectives of the present study were to find out the attitude of male and female school teachers towards gender sensitivity in government, government-aided, and private schools in urban and suburban areas. The present study employed a quantitative empirical research design. This study involved a descriptive survey method, which included a sample of 225 secondary school teachers randomly selected from 27 schools in Kolkata. Data were collected using a self-constructed attitude scale. The collected data were systematically tabulated, analyzed, and interpreted. Descriptive and inferential statistics were used in data analyses, SPSS 20 was used for data calculation, and MS Excel 2007 was used for graphical presentation. The results of the survey revealed that teachers lacked sufficient education specifically focusing on 'gender' as a separate topic. However, the majority demonstrated a strong desire to further their understanding of gender issues. Results showed that there was no significant relationship between male and female teachers, and urban and suburban teachers in their attitude towards gender sensitivity. It was also revealed that there existed significant differences among the attitude of government, government-aided, and private teachers in secondary schools. The present study showed that the status of teachers' attitude towards gender sensitivity was not equally distributed.

Keywords: Attitude, Gender, School, Sensitivity, Teacher

INTRODUCTION

Gender sensitivity calls for changes in behaviour towards raising awareness

of gender equality issues. The aim can be accomplished by implementing various awareness campaigns, training facilities, workshops, programmes, and similar initiatives. Gender sensitivity involves expanding awareness and changing the behaviour of individuals regarding gender (Kalra, Sumaiya, Kumar, Talwar, & Saini, 2021). It is an innovative device capable of increasing gender awareness by eliminating social stereotypes and traditional practices. Education acts as a tool capable of changing perceptions and attitudes (Chaven, 2016). A gender-sensitive approach provides an important avenue for change, demonstrating the ability to address the practical and strategic needs of boys, girls, and transgender people across nations and worldwide (Roy, 2021). Gender sensitivity refers to differences in how men and women engage in operations and business activities. It assesses their access to resources, controls over them, and involvement in leadership and decision-making roles. Gender sensitivity has the potential to act as a tool for reshaping individual's perspectives, fostering a new understanding of gender equality principles in the minds of young people (Baviskar, 2016).The imperative of raising awareness in society about gender issues is very important as it plays a vital role in establishing and ensuring equality between the roles, duties, opportunities, benefits, and expectations of men and women in society (Gure, 2016). Educational initiatives aimed at promoting gender awareness have the potential to act as a powerful and fundamental catalyst for reshaping student perspectives within the formal schooling system. Emphasis on breaking down ingrained stereotypes and patriarchal norms is crucial. Women must assert themselves and challenge patriarchal norms, highlighting the essential role they play in building a resilient, enlightened, and forward-thinking society (Barodia, 2015). Teachers act as catalysts for social change and play a central role in the educational journey. Initially, educators must undergo personal transformation and take full responsibility for encouraging wider societal changes regarding gender equality (Dammani, 2015). Teachers play an important role as catalysts for achieving gender equality. They can effectively promote gender equality by exemplifying progressive attitudes, beliefs, and behaviours in their educational content, teaching methods, and both inside and outside the classroom (Barodia, 2015). Every teacher should undergo professional training to promote mutual understanding between the sexes. They should educate girls about their rights in society, primarily by teaching boys to respect all girls and women. Boys must learn how to interact with girls respectfully, both in school and in society (Gure, 2016). The present study helped to know the secondary school teachers' attitudes towards gender sensitivity.

SIGNIFICANCE OF THE STUDY

Since teachers are the backbone of society, teachers have to play a leading role in establishing gender sensitivity in society. The growing lack of tolerance and empathy within contemporary society creates a damaging environment for

individual's relationships, family dynamics, and the communities around them. Hence, gender sensitivity has emerged as a top priority in contemporary discourse. It is important to note that gender sensitivity does not only advocate sensitivity to women but emphasizes equality for all genders. Gender discrimination can be eliminated by promoting gender sensitivity through education. Educational institutions are tasked with ensuring that all students are gender sensitive and are taught to respect each other without prejudice based on gender. Teachers must consistently receive support to maintain gender equality in their behaviour and engage in critical discussions on issues such as gender sensitivity, social violence, and sexual harassment during classroom activities. They should create awareness in the community that both boys and girls are equal. This study will strive to help teachers overcome the entrenched gender biases of schools and adopt a gender-sensitive attitude.

REVIEW OF RELATED LITERATURE

Reeves and Baden (2000) found that women worldwide face an unequal treatment, and are denied rights, opportunities, and resources simply because of their gender. Jain (2003) highlighted the key challenge of gender mainstreaming, advocating a departure from a narrowly focused pectoral approach to education. Instead, there was a call to recognize the complex connections between education and various dimensions of human life in a broader sense. Duckworth and Seligman (2006) revealed that boys generally achieve better results on standardized tests, while girls generally achieve higher grades. Lumadi and Shongwe (2010) showed that the teachers lacked gender sensitivity in their teaching methods at the secondary education level. Both teachers and students face difficulties in understanding the concept of gender in education. Moreover, teachers did not demonstrate any awareness of gender issues nor did they make any deliberate efforts to address gender inequality in the classroom. UNESCO (2014) highlighted that teachers' attitudes, behaviour, and language have the potential to discourage girls and hinder their progress in the educational environment. Teacher training programmes suffer from a deficiency in providing gender sensitivity education. Teachers must undergo such training to understand and acknowledge their attitudes, perspectives, and assumptions about gender. This ensures that teacher-student interactions do not negatively affect the learning experience and achievement of both boys and girls. Vreckova, Paris, and Jeffrey (2020) showed that women demonstrated greater intercultural sensitivity in four of the five subjects. Yuden, Chuki, and Dorji (2020) indicated that there was a lack of sensitivity to gender in the teaching methods of teachers at the secondary education level. Both teachers and students face difficulties in understanding gender concepts in education. Teachers did not show any awareness of gender issues nor did they actively try to address gender inequality in the

classroom. Kalra et al. (2021) expressed that significant influences on gender sensitivity in both private and government CBSE-affiliated schools include gender-sensitive stakeholders, gender-neutral practices, and gender-inclusive capacity building. These are important elements that need to be focused on during gender sensitivity training programmes. De Jesus, Dorado, Biag, Durante, and Llames (2022) revealed that no significant correlations were observed between grade level and exposure to queer literature, or between gender and level of gender sensitivity. Niones (2022) revealed that there was no significant relationship between teachers' gender sensitivity attitudes towards their students and the aspects of gender sensitivity. Therefore, teachers were strongly advised to improve their training on gender sensitivity to effectively address gender-related issues in schools. In the review of past research, the present researchers did not explore teachers' attitude regarding gender sensitivity within secondary schools in Kolkata during their investigation. So, there was a gap in the area. Therefore, the investigators considered this study.

OBJECTIVES

The following objectives were taken into consideration for the study:

O1: To find out the attitude of male and female secondary school teachers towards gender sensitivity in schools.
O2: To find out the attitude of government, government-aided, and private secondary school teachers towards gender sensitivity in schools.
O3: To find out the attitude of urban and suburban secondary school teachers towards gender sensitivity in schools.
O4: To know the status of teachers' attitude towards gender sensitivity in secondary schools.

HYPOTHESES

The following hypotheses were postulated for the study:

H01: There is no significant difference between male and female secondary school teachers regarding their attitude towards gender sensitivity in schools.
H02: There is no significant difference among government, government-aided, and private secondary school teachers regarding their attitude towards gender sensitivity in schools.
H03: There is no significant difference between the urban and suburban secondary school teachers regarding their attitude towards gender sensitivity in schools.

RESEARCH QUESTION

RQ: What is the status of teachers' attitude towards gender sensitivity in secondary schools?

DELIMITATIONS

The present study was delimited to:

1. Secondary co-educational schools from Kolkata.
2. Secondary school teachers.
3. West Bengal Board of Secondary Education (WBBSE) only.

METHODOLOGY

A descriptive survey method and empirical research design were employed for the study. The population of the study included all teachers of all the secondary schools in Kolkata. 27 secondary schools and 225 secondary school teachers (Male Teachers- 115, Female Teachers- 110, Government Teachers- 85, Government-aided Teachers- 112, Private Teachers- 28, & Urban Teachers- 185, Suburban Teachers- 40) were selected randomly for the present study. In this study, the investigators considered two types of variables. The first variable was attitude towards gender sensitivity which was the major variable and the second variables were gender (male & female), type of school (government, government-aided, & private), and location (urban & suburban) which were categorical variables. A closed-ended self-structured questionnaire was used to collect data for this study. This tool consisted of 20 items on a three-point Likert Scale. The response categories were provided namely, Agree, Neutral, and Disagree. These14 items were positive (scores were a warded Agree-3, Neutral-2, and Disagree-1), and 6 items were negative (scores were a warded Agree-1, Neutral-2, and Disagree-3). To collect data, the investigators used a standardized tool namely, the Teachers' Attitude Scale towards Gender Sensitivity (TASTGS), which was developed by the researchers. The investigators collected data through field survey. Data was analyzed through descriptive statistics (such as mean, SD, and percentile) and inferential statistics (independent-samplest-test and one-way ANOVA were tested at .05 level of significance) by SPSS 20 and graphical representations (bar graph) were done by MS Excel 2007 in this study.

Data Analyses and Interpretation

Testing of H01: There is no significant difference between male and female secondary school teachers regarding their attitude towards gender sensitivity in schools

Table 1: Mean Comparison of Attitude of Teacherstowards Gender Sensitivity in Secondary Schools: Gender

Gender	*N*	*M*	*SD*	*Mean Difference*	S_{ED}	*t(223)*	*p*
Male	115	47.30	4.07	0.86	0.55	1.57*	.12
Female	110	48.15	4.15				

*Not significant at .05 level

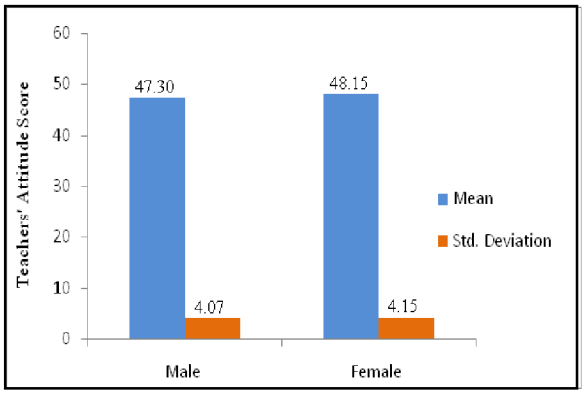

Figure 1: Bar Graph for Mean & Std. Deviation Score of Male and Female Teachers' Attitudetowards Gender Sensitivityin Secondary Schools

Table 1 revealed a non-significant mean differencebetween the male andfemale secondary school teachers on their attitude towards gender sensitivity with t(223) = 1.57, p>.05.Table 1 & figure 1 showed that male secondary school teachers exhibited lower attitude scores on gendersensitivity (M = 47.30, SD = 4.07) compared to the female school teachers (M = 48.15, SD =4.15). Therefore, the null hypothesis (H01) was not rejected.

Testing of H02: There is no significant difference among government, government-aided,and private secondary school teachers regarding their attitude toward gender sensitivity in schools

Table 2: Descriptive Statistics of the Scores on Attitude of Teacherstowards Gender Sensitivity in Secondary Schools: Type of Schools			
Type of School	N	M	SD
Government	85	48.89	4.39
Government-aided	112	47.07	3.89
Private	28	48.18	3.90
Total	225	47.72	4.12

Table 3: Mean Comparison of Attitude of Teacherstowards Gender Sensitivity in Secondary Schools: Type of Schools					
Source of Variances	Sum of Squares	df	Mean Square Variance	F	p
Between Groups	103.34	2	51.69	3.10*	.05
Within Groups	3704.46	222	16.69		
Total	3807.80	224			

*Significant at .05 level

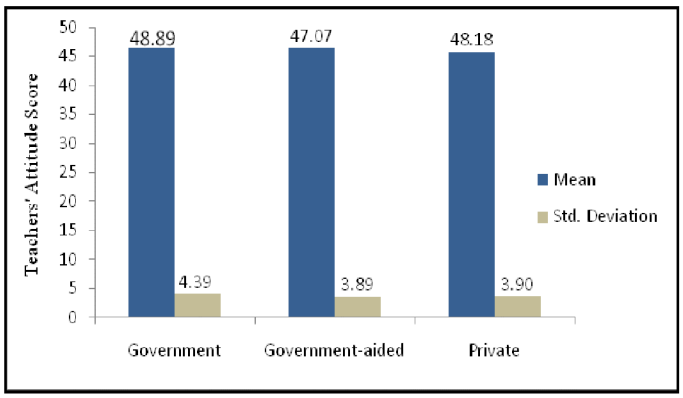

Figure 2: Bar Graph for Mean & Std. Deviation Score of Government, Government-aided, and Private Teachers' Attitude towards Gender Sensitivity in Secondary Schools

Table 3 revealed significant mean difference among the government, government-aided, and private secondary schools on their attitude towards gender sensitivity with $F(2,222) = 3.10$, $p<.05$.Table 2 & figure 2 showed that government secondary school teachers exhibited higher attitudes coreson gender sensitivity (M = 48.89, SD = 4.39) compared to the government-aided secondary school teachers (M =47.07, SD = 3.89) and private secondary school teachers (M = 48.18, SD = 3.90). Therefore, the null hypothesis (H02) was rejected.

Test of H03: There is no significant difference between urban and suburban secondary school teachers regarding their attitude towards gender sensitivity in schools.

Table 4: Mean Comparison of Attitude of Teacherstowards Gender Sensitivity in Secondary Schools: Location							
Gender	N	M	SD	Mean Difference	SED	t(223)	p
Urban	185	47.55	3.98	0.92	0.72	1.29	.20
Suburban	40	48.48	4.70				

*Notsignificantat .05level

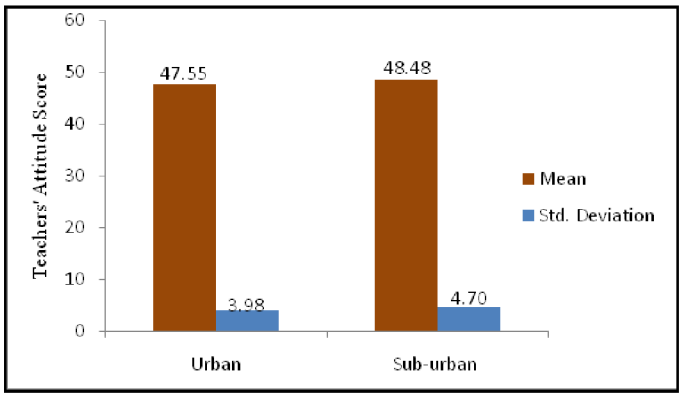

Figure 3: Bar Graph for Mean & Std. Deviation Score of Urban and Suburban Teachers' Attitude towards Gender Sensitivity in Secondary Schools

Table 4 revealed a non-significant mean difference between the urban and suburban secondary school teachers on their attitude towards gender sensitivity with t(223) = 1.29, p>.05.Table 4 & figure 3 showed that urban secondary school teachers exhibited lower attitude scores on gender sensitivity (M = 47.55, SD = 3.98) compared to the suburban school teachers (M = 48.48, SD =4.70). Therefore, the null hypothesis (H03) was not rejected.

Exploration of RQ: What is the status of teachers' attitude towards gender sensitivity in secondary schools?

Table5: Percentile Status for Teachers' Attitude towards Gender Sensitivity				
Percentiles	***Raw Scores***	***No. of Teachers***	***Percentage***	***Levels of Attitude towards Gender*** Sensitivity
P75&Above	51 & Above	68	30.22	High
P25 to P75	44 to 50	115	51.11	Moderate
P25 & Below	43 & Below	42	18.67	Low
Total		225	100	

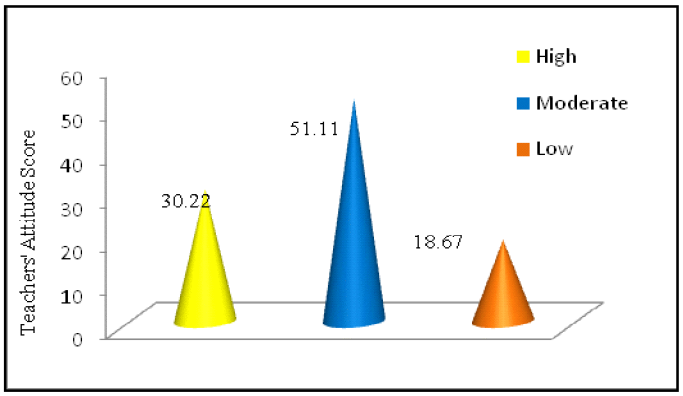

Figure 4: Bar Graph for Status of Teachers' Attitude towards Gender Sensitivity

Table 5 and Figure 4 revealed that 30.22% of the samples (68 secondary school teachers) had the attitude of high level of gender sensitivity, 51.51% of the samples (115 secondary school teachers) had the attitude of moderate level of gender sensitivity, and 18.67% samples (42 secondary school teachers) had the attitudeo flow level of gender sensitivity.

FINDINGS AND DISCUSSION

According to H01, investigators found that there was a small difference in the mean value of male and female school teachers' attitude, but it was marginal. Thus, it was clear that both male secondary school teachers' and female secondary school teachers' attitude were equal towards gender sensitivity. According to H02, investigators also found that the mean value of government secondary school teachers' attitude was more than that of government-aided and private secondary school teachers' attitude towards gender sensitivity in schools. So, it was indicated that the attitude of government secondary school teachers was more positive in gender sensitivity as compared to the government-aided and private secondary school teachers in schools. According to H03, the mean value of suburban secondary teachers' attitude was more than that of urban secondary teachers' attitude. Hence, it was indicated that suburban secondary teachers' attitude were more positive towards gender sensitivity as compared to urban secondary teachers' attitude in schools. According to RQ, a maximum number of secondary school teachers revealed their attitude towards gender sensitivity was moderate, fair, and sound; the least no. of teachers revealed low and unfavourable attitude, and the rest of the teachers revealed high and most favourable attitude towards gender sensitivity.

The study revealed that male and female secondary school teachers' attitude towards gender sensitivity were the same. The results were similar to the findings of De Jesus et al. (2022) where they found gender was not a significant factor between grade level and exposure to queer literature, or between gender, and extent of gender

sensitivity. On the other hand, according to the study of Lumadi and Shongwe (2010) the secondary education level, teachers had demonstrated a deficiency in incorporating gender sensitivity in their teaching methods, thereby creating challenges for both educators and students to grasp the concept of gender in education. The investigators also found that there was a significant mean difference in their attitude towards gender sensitivity among government, government-aided, and private secondary schools. Similarly, Kalra et al. (2021) found that important factors influencing gender awareness in both private and government CBSE-affiliated schools include stakeholders who are gender-sensitive, gender-neutral practices, and capacity-building efforts to promote gender inclusion. In the world, women face unfair treatment, their existence is devalued, and they are denied rights, opportunities, and resources simply because of their gender, which was observed by Reeves and Baden (2000). However, this was contradicted by the findings of Calles and Domael (2019). On the other hand, the study expressed that secondary teachers of urban and suburban schools were not different concerning their attitude toward gender sensitivity. However, Yuden et al. (2020) found that secondary-level school teachers lacked gender sensitivity in their teaching methods. Furthermore, the study also revealed that both teachers and students face the challenge in understanding gender concepts within educational settings, and teachers lack awareness of gender issues and do not make efforts to address gender inequality in the classroom. The results were also similar to the findings of Niones (2022) and contradicted the findings of Duckworth and Seligman (2006).

RECOMMENDATIONS

- Teachers need extensive training in gender sensitivity to proactively address various gender-related concerns within the school environment.
- School parameters can be fully aligned with gender sensitivity for everyone involved.
- The administration needs to examine the missing aspects in schools to address concerns of gender sensitivity. The gender and development department of the institution can explore the necessary programmes to address gender-related issues.

CONCLUSION

Gender sensitivity involves changing behaviour through heightened awareness of gender equality issues. It involves examining and challenging one's personal views and beliefs, even those that were previously understood (Kalra et al., 2021). Addressing gender sensitivity is crucial at this point. Transformation and empowerment serve as dual tools through which we can shift societal attitude toward gender away from traditional stereotypes. Education acts as a vehicle for inculcating the idea of gender equality in the minds of the youth, with teachers acting as carriers

of knowledge (Vreckova et al., 2020).Teachers' attitude towards gender sensitivity concerning their students offers varying levels of exposure to gender sensitivity within schools. The teachers demonstrate an awareness of gender sensitivity in both knowledge and practice within their profession and school environment. Teachers exhibit varying training of gender-sensitive attitude due to differences in their exposure to gender-sensitive training. School regulations address gender sensitivity concerns, emphasizing the importance of gender-sensitive policies within educational settings to promote gender equality through the education system (Calles & Domael, 2019). Gender sensitivity attitude among teachers through training may not be influenced by specific aspects of gender sensitivity within schools. Gender sensitivity is needed through programmes aimed at raising the awareness of secondary education teachers (Yuden et al., 2020).Through the gender-sensitive attitude of teachers, students become self-reliant in and out of school.

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THINKING IN PICTURES AND OTHER REPORTS FROM MY LIFE WITH AUTISM; EXPANDED EDITION INCLUDING THE MOST RECENT RESEARCH, THERAPY, AND RESOURCES.

Authored by Temple Grandin, New York,
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Keywords: Autism, ASD, body-boundary problem, DSM-IV, echolalia, fixation, high-functional, low-functional, melting down, mood disorder, multitasking, neurodivergent, neurodiversity, neurolepticism, neurotypical, on the spectrum, sensory jumbling, systematiser.

I was seemingly excited for getting the opportunity of reading and reviewing (Thanks to the Editor of the *Anwesa* who compelled me to do this job though initially I was reluctant to do so.) Dr. Temple Grandin's book: *Thinking in Pictures and Other Reports from My Life with Autism* (2006).This book, to put it in a nutshell,provides readers with a comprehensive and contemporary coverage of issues related to autism and autism spectrum disorder (ASD). She writes the book from the dual perspectives of a scientist and an autistic person. Common readers as well as experts, especially those who are interested in neurodiversity and ASD can equally derive pleasure in reading the book.

It is her second autobiographical book after *Emergence: Labelled Autistic* (1986). Dr. Grandin, a high-functioning autistic and a gifted professor in Animal Sciences at Colorado State University, was profiled by Oliver Sacks, a noted neurologist, in his recent book, *An Anthropologist on Mars* (1995). Besides a plethora of recent researches on neurodiversity and autism, Grandin's book offers a series of original essays on her life, professional works and religious belief.

Dr. Grandin (1947-) is a gifted animal scientist who focuses on the humane treatment of animals and livestock-handling facilities. She is an autistic (neurodiverse/neurodivergent) woman and she declares that she thinks in pictures and videos unlike most of neurotypical people, which has benefitted her immensely

in her profession. Her book gives the readers a rare opportunity to look inside her brain - which is supposed to be wired differently like other neurodivergents - as she shares accounts from her childhood, how she would play or scream, swing or rock alone, endlessly disconnected from others, her first beginning of speech, her total failure to understand or be understood by other children in her school, her desire for, but fear of contact, her bizarre daydreams, her profession, and her curiosity in neurodiversity, especially ASD.

At the outset, it might seem almost impossible for most of us to believe that an autistic woman has written an autobiography. Proving us wrong, Grandin has made it palpably possible. In her memoir she explains how, like other autistic people, she identifies herself with Star Trek's (a popular TV show) irrepressibly logical and unemotional Mr. Spock. Like Spock, she has not felt the aesthetic joy of a sunrise or sunset or of love and human bondage. Yet she feels keenly the anguish and suffering of animals. She describes a difficult childhood during which her worried mother struggled to communicate with her. Despite her communication problems, Grandin attended ordinary schools and had entered college before she realized that autism made her emotions different in kind from those of non-autistic people. Her emotions are more childlike, she admits, and they are dominated mostly by fear.

These feelings, she strongly believes, are close to the emotions of nonhuman animals. Her ability to put herself in an animal's place–to sense its elementalfear and learn how to soothe it–has helped her succeed as an animal scientist at Colorado State University. She has become quite famous for designing animal feed yards and humane slaughterhouse procedures, which have been adopted by no less than one third of all livestock facilities in the U.S.A. In addition to animal sciences, Grandin has studied the available data on brain development and immediately she realized how not only her emotions, but her thought processes differ from those of other people. She thinks in vivid three-dimensional pictures, which seem to run on a tape that she can fast forward and rewind at will.

On the whole, the book has eleven chapters and I think the first five chapters are particularly interesting for the general readers. Some later chapters may seem interesting to those who are passionate about animal sciences.

The book begins with a Note from the Author where she states her purpose of writing the extended version of the book (first published in 1995) and refers to subsequent additions of information regarding autism and visual thinking with most recent researches and their results. Thereafter comes a beautiful Foreword by Oliver Sacks written in consonance with empathetic attitude towards a neurodivergent writer. According to him, along with Grandin's first book, *Emergence: Labelled Autistic,* this book is a unique and unprecedented one because 'there had never before been an "inside narrative" of autism' (p.xiii). It is extraordinary because "Temple

Grandin's voice came from a place which had never had a voice, never been granted real existence, before – and she spoke not only for herself, but for thousands of other, often highly gifted, autistic adults in our midst" (p.xiii). Through this book Grandin introspects into her own nature which she feels is quintessentially concrete and visual (with the great strengths, and the weaknesses, which may go with this). Thinking in pictures represents a mode of perception, of feeling and thought and being. Grandin does not romanticise autism, nor does she criticise autism by saying her autism has cut her off from the social life, the pleasures, the rewards, the recognitions, the companionship which define life for most of the neurotypicals. On the contrary, she has a very strong and positive sense of her own being and worth, and how autism, paradoxically though, may have contributed to this fullness and ripeness of life.

The First Chapter of this book is deeply moving and extraordinarily fascinating to read because it provides a bridge between our world and hers, and allows us to have a glimpse into a quite other sort of mind. Taking cues from Francis Galton's *Inquiries into Human Faculty and Development* (1883), Grandin shares how most people believe that all people think in the same way, which is, of course, not true. Eventually, she learned that there are three ways of thinking, which could be the first step to better understanding those around us. These thinking ways are:

i) Some people are completely verbal and think only in words;
ii) Some people (especially autistic people) think in vividly detailed pictures;
iii) Most others think in a combination of words and vague, generalized pictures; (Chapter-1, p.11)

In the Update section of First Chapter, she uses the terms such as i) Visual thinkers, ii) Music and Math thinkers, iii) Verbal logic thinkers (p.28-29). Throughout this book she explores the different variations in thinking and how the differences can lead to great innovation or satisfaction in a particular field. It is from the first chapter we come to know the cognitive features of autistic persons mentioned by Grandin such as: They [autistic persons] excel at visual spatial skills (p.3); they have highly associational thought patterns (p.9); autistics have problems in learning things that cannot be thought about in pictures (p.13); my thinking pattern always starts with specifics and works toward generalization in an associational and nonsequential way (p.16); people with autism have tremendous difficulty with change (p.18); they cannot handle any deviation from their routine (p.24); people with autism sometimes have body boundary problems (p.25); all individuals on the autism/Asperger spectrum have difficulties with forming concepts (p.29), etc. which are important to know for parents and mentors of neurodivergent children while handling them in the family or in school.

The **Second Chapter** deals with diagnosis of autism and its position in the spectrum. Following DSM-IV of American Psychiatric Association (1994), she has mentioned the diagnostic categories of ASD as: autism, pervasive developmental

disorder (PDD), Asperger syndrome, and disintegrative disorder (now the current and latest version is DSM-V-TR of 2022 and there are some obvious changes in related terminology). There is much controversy among professionals about them; some believe them to be separate entity while others believe them to lie on an autistic continuum between them (p.36). In this context she cites the names of some syndromes, which are often not known to general readers, such as Kanner's syndrome, Asperger's syndrome, Rhett's syndrome, Landau-Kleffner syndrome, etc. At the end she has also touched on genetic bases of autism and categorically she says:

(i) There is no single autism gene, though most cases of autism have a strong genetic basis. If a person is autistic, his or her chances of having an autistic child are greatly increased. There is also a tendency for the siblings of autistic children to have a higher incidence of learning problems than other children (p.40).

(ii) … neither parent should be held responsible for an autistic child. Scientific studies and interviews with families indicate that both the father's and mother's side contribute genetically to autism (p.41).

The Update section of Chapter-2 is particularly important for parents having autistic children because it is here she discusses the probable causes of autism (i.e. genetic susceptibility, exposure to toxic agents, the timing during development, etc.) and early intervention or early education of autistic children in the form of Lovaas' method, Applied Behavioural Analysis (ABA), Dr. Koegel's method, etc.

Chapter-3 begins with a personal note of Dr. Grandin's own feelings and experience regarding her sensory problems like 'pressure stimulation' for which she made a machine called "the squeeze machine", and modified it several times later. In this chapter readers get a comprehensive idea of the autistics in the context of sensory stimulation and sensory problems like pressure stimulation (for which some autistics crawl under matresses, wrap up in blankets or wedge themselves in tight places, etc.), sense of touch, severe body boundary problem, auditory problems leading others (i.e. neurotypicals) to believe that autistics, especially non-verbals, are deaf; they cannot rapidly shift their attention between a visual and an auditory task, they have difficulty with noisy gatherings of people, they do not pay attention to spoken language, they have severe visual processing problems, they have problems in making eye-contact, fluorescent lighting causes severe problems for many autistic people, and many autistic children are finicky and eat only certain foods. They are unable to tolerate the texture, smell, taste, or sound of the food in their mouth.

In the Updating section, she refers to recent researches on the area of sensory problem and suggests several approaches to teaching or educating the autistics, such as: auditory training, use of echolalia for teaching reading, use of touch for letter recognition, and several others.

The next chapter **(Chapter-4)** deals with another important topic: relationship between emotion and autism and in this comparatively small chapter Grandin recalls the problems she faced with others for her emotion which is different from neurotypicals. She begins by saying, "To have feelings of gentleness, one must experience gentle bodily comfort. As my nervous system learned to tolerate the soothing pressure from my squeeze machine, I discovered that the comforting feeling made me a kinder and gentle person" (p.84). She refers to the old and rejected theory of autism, popular till the 1970s, that placed the blame on the "refrigerator mother", whose supposed rejection of the child caused autism. Then she adds: "We now know that autism is caused by neurological abnormalities that shut the child off from normal touching and hugging". She also describes autistic emotions, especially her personal ones which may help us relate with the emotional behaviour of other autistic people. To give a few example: Teasing from other kids was very painful, and I responded with anger (p.90), Any change in my school schedule caused intense anxiety and fear of a panic attack (p.90), My emotions are simpler than those of most people. I don't know what complex emotion in a human relationship is (p.91), At a conference a man with autism told me that he feels only three emotions – fear, sadness, and anger. He has no joy. He also has problems with the intensity of emotions, which both fluctuate and get mixed up, similar to sensory jumbling (p.93), The work I do is emotionally difficult for many people, and I am often asked how I can care about animals and be involved in slaughtering them. Perhaps because I am less emotional than other people, it is easier to face the idea of death (p.94).

In the Update section, Grandin takes up the issue of empathy of the autistic people. In general, autistics are very empathetic. From recent researches of Simon Baron-Cohen of Cambridge University we come to know about two emotional brain types – empathizers or systematizers. Empathizers are people who relate to other people through their emotions. Systematizers are people who are more interested in things than people. People with autism tend to be systematizers and Grandin scored high on Baron-Cohen's test for being a systematizer.

Chapter-5 delineates Grandin's education right from the nursery to the university level leading to her profession. Initially she faced hardship which culminated at the high school level. In schools she did not get much help from psychologists and psychiatrists because they were too busy to psychoanalyze her and find her dark psychological problems. The high school psychologist tried to stamp out her fixations on things like doors instead of trying to understand them to stimulate learning. It was Mr. Carlock, her science teacher and mentor, who used her fixations to stimulate her learning science. Teachers need to help autistic children develop their talents. But sadly, there is emphasis on 'deficit' rather than 'developing skills' and 'abilities'. Autistic people need to build on their strengths and use their interests

for their education. In this context Grandin mentions the fields where autistics excel in, for example, computer programming, engine repairing, graphic art, drafting, cartooning, etc. In the Update section she opines that multitasking is a problem for autistics but high-functionals can perform well in multitasking activities.

Most of the readers might find **Chapter-6** uninteresting as she addresses a controversial topic, i.e. medication of autistics. During adolescence, Grandin started facing stress-related health problem due to her nervous breakdown and panic attack. Owing to her survival instinct she gradually turned on to biochemistry and began to use anti-depressant drugs to control anxiety and it had positive effect on her. She has no hesitation to admit that, after taking prescribed drugs by psychiatrists and doctors, her behaviour changed slowly, her eye contact had also improved (p.129). In the following pages she discusses some medicines and their generic names useful for autism, epileptic-like condition, self-abuse, neurolepticism, non-verbal adults, ADHD, along with her warnings on the diet and vitamin supplement and medication for autistics. Dr. Grandin's discussion with detailed information regarding diagnoses and various medicines and their side effects, paired with an abundance of researches is really incredible.

Social relationship, emotional attachment, conflict between logic and emotion, etc. are the central themes of **Chapter -7** and it is an important chapter to understand the problems of autistics related to social skills and social interactions. Grandin confesses that she identifies herself with Mr. Spock, a character of TV show Star Trek who places importance to logic instead of emotion unlike his other crewmen. Social interaction which comes most naturally to most people can be daunting for people with autism (p.153). All her life, Grandin watches things from outside and cannot participate in social interactions. Personal relationship is something Grandin does not really understand and she considers "physical intimacy" to be the biggest "sin of the system". That is why most autistics remain celibate or marry a person with similar disability (p.155). Autistics can learn business relationships by rote but dating is a difficult thing for them to handle properly. She gives many examples of autistics who face or confess their problems in figuring out what other people think in emotional situations. It is a surprising fact that autistics are very bad at "deception" because of the complex emotions involved in it. In the Update section Grandin picks up issues like development of social skills, shared interests, learning manners and social survival, social relatedness, emotional cues in the autistics.

From **Chapter -8 & 9** one can learn that Dr. Grandin's specialty is in handling of cattle, and her ability to think in pictures is what allowed her to be so successful in her career. She can place herself in what she calls the "cow's eye view," which is where she can picture herself as the cow working through a particular system. She

can literally picture how the cow will feel, what will make it calm, what will frighten it. Before Dr. Grandin, this was not a common thought; she completely changed the way people view cattle and livestock handling. There is a long discussion **(Chapter-9)** on the relation between sensation and autism, emotion and autism, relationships and autism, genius and autism, religion and autism which may seem strangely juxtaposed with her discussion on "connecting with animals" and "understanding animal thought" – but for Grandin, clearly, there is a continuum of experience extending from the animal to the spiritual, from the bovine to the divine.

She eloquently discusses the major topic of talent and genius in **Chapter-10** while always relating it back to autism. Grandin once met the second cousin of Albert Einstein and from her Grandin came to know about their family history. That cousin of Einstein had a musically talented child and an intellectually gifted child. Since then she talked with many families having autistic children and discovered that parents and relatives of them are often intellectually gifted (p. 204). From her subsequent studies she has found that mathematical giftedness reinforces the idea of abnormality and genius, that creative writers have mood disorders, that Einstein, van Gogh, and Bill Gates have mild autism. Mild autistic traits, she thinks, provide the single mindedness that gets things done (p.215).

Equally interesting and thought provoking is her chapter on autism and religion **(Chapter-11)**. As an autistic woman she believes in God, Soul, and Heaven. For many people with autism, religion is an intellectual rather than emotional activity (p.223) but for Grandin it is "a means of attaining a certain kind of truth" (p.228). She has also given her thought to the question of immortality and life's meaning. In this last chapter she has raised two questions: What happens after death (p.226)? What is really significant in life (p.227)? Readers might feel the intensity and urgency of Grandin's mission of life when she says: "The possibility that a void exists after death has motivated me to work hard so I can make a difference – so that my thoughts and ideas will not die" (p.232).

At the end of the book, we get chapter-wise References and Selected Readings followed by Resource List which are very helpful to those who are actively engaged in research on ASD. Another features that add flavour to the book are its pictures & illustrations, attractive cover & its design and high quality of printing.

No doubt, *Thinking in Pictures* does an excellent job of explaining the science and psychology of autism; however, it ignores to mention the models of neurodiversity and disabilities. In disability studies there are many frameworks. The two most common are the Medical Model and the Social Model. The neurodiversity movement views neurodivergence as a disability only under the Social Model of disability though maximum people talk about autism from the point of view of medical model. This aspect has not been touched in this book. Grandin divides

autistic people into a binary category. Either they are socially awkward geniuses, or they are significantly disabled and nonspeaking. This view of Grandin appears dated and discriminatory towards nonspeaking and those with significant disabilities. Thus, there are certain issues with which readers may not agree with Grandin, yet I still highly recommend readers to go through the book. There is a wealth of information to be gained, especially about education of neurodivergents. Finally, to conclude, it can only be said that Dr. Temple Grandin may think in pictures, but she has also mastered, after strenuous efforts, the art of composing in words as it is evident in this highly readable account of her life which is stunningly different from that of us. Her prose may seem uneven and staggering, syntax may seem deviant at times,there may be some typos or grammatical errors here and there, yet it is worth reading because of its simple and engaging style.

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