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Swami Jayananda

The Secretary,

Ramakrishna Mission Brahmananda College of Education,

Rahara, Kolkata - 700 118,

West Bengal, India.

All Correspondences should be addressed to:

The Principal

Ramakrishna Mission Brahmananda College of Education,

Rahara, Kolkata - 700 118

e-mail : rkmberahara@gmail.com / official@rkmbcrahara.org

Phone : +91-33-2568-2021

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FROM THE EDITOR'S DESK

Education in Post-Covid World: What Can the G20 Offer?

“ No other investment yields as great a return as the investment in education. An educated workforce is the foundation of every community and the future of every economy.”
– Brad Henry

The world has witnessed several challenges like global shut down due to pandemic, Russo-Ukrainian War, the recession in the USA etc. Amidst these challenges, India is rising as a promising economy in the global context. This year India is hosting G20 summit which is one of the prestigious moments for us and the world is looking at us to explore the outcomes of this summit.

The Group of Twenty (G20), a forum of economic and political cooperation, was formed in 1999 in a meeting among the central bank governors and finance ministers of the European Union and the 19 most systematically significant countries like India, Italy, Argentina, Australia, Brazil, Canada, China, Germany, Indonesia, Türkiye, Japan, France, Republic of Korea, Mexico, Russia, South Africa, the United Kingdom, United States of America and Saudi Arabia (Berawi, 2022). Though the G20 was formed to address several issues like climate change, environment, trade, sustainable development, agriculture, health, macroeconomic issues and anti-corruption, the issue of education was particularly discussed in the Summit in Argentina in 2018 and it was included as a part of the Sherpa Track. This meeting leads to the formation of the Education Working Group (EdWG) which meets about three to four times annually in several parts of various countries. Later, UNESCO supported the educational initiatives of the G20 group to shape the future of life, work and education.

The Education Working Group (EdWG) of the G20 contributed significantly in promoting and developing education across the globe. In its opinion, education plays a crucial role in enabling human dignity and empowerment on a global scale (Matovich & Srivastava, 2023). Various countries including UNESCO, IMF are working together for promoting an inclusive, sustainable and equitable future. This working group is giving importance on the following important aspects of education such as - leveraging digital technologies, ensuring functional literacy and numeracy, strengthening the relevance and linkages of education with the future of work, and promotion and collaboration between higher education, research, development and innovation within and across national boundaries.

This group understood the importance of digital technologies. They suggested that education should be more technology based, holistic and accessible to all. This group also opined that the

recent findings and innovations on technologies such as Artificial intelligence and Big data should be incorporated in our education system.

Early childhood education is one of the important aspects of our education system. Therefore, this group has expressed its concern on providing healthy environment and opportunities to the children for their overall development. The children should be protected from all kinds of abuse, violence, conflict and neglect. They have also explored that the situation is quite grim in some poor and developing countries. Hence, the special attention should be given to these countries for developing numeracy and literacy in the early childhood years.

This group proposed that education should help an individual to develop their life skills, literacy skills, collaboration, communication, critical thinking skills, and innovative ideas. These skills will help the young generation to solve various problems in their lives and will make them employable in various sectors. This group has also promoted the concept of lifelong learning as it is needed to cope up with the changing scenarios of the world.

The last important issue which The EdWG has discussed is the importance of higher education, the spirit of collaboration, promotion, exchange and development of research ideas and utilizing the human resources properly for innovation and sustainable development.

The G20 has tremendous influence on the economy as well as on the education system. The members have agreed that everyone irrespective of their gender, age, caste, religion, physical and mental difficulties should have equal access to education. Therefore, it has a great influence on spreading an education system which is equal and accessible to all. Mr. Dharmendra Pradhan (2023), the Indian Minister of Education rightly said, “The G20 countries have agreed upon the role of education as critical enabler of human dignity and empowerment globally. The countries agreed upon the need to work together for resilient, equitable, inclusive, and sustainable future through education”.

This edition of “Anwesa” (Volume 2023) will help us to discuss and explore many new issues in the field of education. I hope the reader will enjoy reading this issue.

Rahara
August, 2023

Dr. Samrat Bisai
Assistant Professor

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ANALYSIS OF ATTITUDE OF TRAINEE TEACHERS TOWARDS ONLINE TEACHING-LEARNING PRACTICES DURING DEADLY SURGE OF COVID-19 PANDEMIC IN WEST BENGAL

Dr. Subhasis Mukherjee

Principal, Shyamaprasad Institute of Education & Training, Kolkata

Dr. Sujit Pal

Principal, Institute of Education for Women, Hastings House, Kolkata

ABSTRACT

The present study was conducted to analyze the attitude of the B.Ed. trainee teachers in West Bengal with respect to online teaching-learning practices in the event of the 2nd and 3rd waves of the Covid-19 pandemic situation. A self-made five-point attitude scale was developed, standardized and administered on 369 randomly selected B.Ed. trainee teachers of 2020-2022 & 2021-2023 academic sessions for measuring their attitude under four categorical variables viz. gender (male & female), institutions (Government, Government aided & self-financed), residential zones (urban, rural and semi-urban), and streams (Science & Social Science). A significant difference has been observed between male and female trainee teachers with respect to their attitude toward online teaching-learning practices. Male trainee teachers show more positive attitudes (Mean = 84.22) than females (Mean = 81.63). This may be due to the fact that they received more easy access to digital instruments and remained less busy in their household activities than their female counterpart. The present study failed to establish any significant difference between the trainee teachers with respect to their academic discipline or stream and residential zone. This may be due to the fact that attitude is an intrinsic feature of an individual and is not influenced by academic discipline and residential zone. On the other hand, the present treatise reveals that attitude toward online teaching-learning practices significantly differs among the nature of institutions (Government, Government aided & Self-financed). This may be due to the fact that trainee teachers from different institutions are not always receiving equal opportunities to use the digital platform. Moreover, the present study established a significant interaction effect between institutions and residential zones on trainee teachers' attitudes towards online teaching-learning practices. Finally, it was observed that the trainee teachers were not very much interested in online teaching-learning process; rather they wanted to use this avenue as a secondary pathway during the pandemic situation.

Keywords: Trainee teachers, Online Teaching-Learning, Covid-19 Pandemic, Digital Platform.

INTRODUCTION

The deadly surge of the Covid-19 pandemic has adversely impacted education at all levels in various ways right from pre-primary to higher and technical education. The teacher education programme is no exception. This biological disaster caused a forced transition from face to face interaction to remote teaching-learning. As such the researchers went through different online research journals. Some of the important research works carried out in this area have been presented here. In the field of teacher education so many constraints in terms of complex home environment (Zhang *et al.* 2020), lack of monitoring and support services (Judd *et al.* 2020), lack of teacher educators' competencies in the use of digital instrumental formats (Huber and Helm 2020), insufficient and unstable internet connectivity, inadequate computer lab, lack of computers and associated technical problems (Zalat *et al.* 2021) and digital divide (Mpungose 2020) have been identified. Students made little or no progress while learning from home (Engzell *et al.* 2021). Brinia and Psoni (2022) studied on online teaching practicum during Covid-19 pandemic and indicated that the teacher candidates got acquainted with new technologies to a great extent and developed skills for their future teaching like adaptability, flexibility and handling of students' interaction via online settings. Kidd, Warren, Murray and Jean (2020) studied the effect of Covid-19 pandemic on teacher education programme. They reported that how pedagogies relocated learning communities to new online spaces when practicum was forcibly removed due to pandemic situation. Carmen *et al.* (2020) conducted a study on Covid-19 and teacher education where the need for a comprehensive view of the pedagogy of online education was highlighted. Mahmood (2020) also conducted a study on instructional strategies for online teaching in Covid-19 Pandemic and suggested various instructional strategies for higher education institutions in the event of online teaching-learning practices. Dhawan (2020) conducted Strengths, Weakness, Opportunities and Challenges (SWOC) analysis of e-learning at the time of crisis and also gave suggestions on how to deal with challenges associated with online learning. As far as teacher education is concerned, descriptions of how institutions and stakeholders adapted to the new scenario created by Covid-19 pandemic as well as training strategies and experiences of innovation have been reported. Carrillo and Flores (2020) conducted a literature review of online teaching and learning practices. The findings highlighted the need for a comprehensive view of the pedagogy of online education that integrates technology to support teaching and learning. Almahasees *et al.* (2021) found that both faculty and students agreed that online education was useful during the pandemic situation and recommended that blended learning would help in providing a rigorous learning environment. Naik *et al.* (2021) indicted that lack of facilities, infrastructure, technological tool

and the internet access were the major drawbacks for conducting online sessions in India. Mishra *et al.* (2020) reported one troublesome issue associated in conducting practical classes during lockdown period. This study also revealed that there has been a greater realization of the time bound relevance and criticalities of online teaching-learning mode during the lockdown period. Elumalai *et al.*(2020) showed that there was a significant difference in the perception of the students between gender, level of the course on the quality of e-learning in the higher education sector during the Covid-19 pandemic. A case study of Peaking University on Human Behaviour & Emerging Technologies (2020) presented high impact principles for online education in terms of online instructional design, providing assistance to students, effective delivery through online mode and contingency plan to deal with unexpected incidents of online education platform. Rapanta *et al.*(2020) showed how the Covid-19 pandemic has raised significant challenges for the higher education community worldwide. Bordoloi *et al.*(2021) enumerated the prospects and challenges of providing online/blended mode of teaching & learning in a country like India, particularly during and in post Covid-19 situation.

It is evident that the self-financed secondary teachers' training institutions in West Bengal are mostly based on traditional methods of teaching and learning. But during second and third wave of Corona Virus, it was impossible to follow the traditional set up of face to face lectures in a classroom. Thus, this article intended to inquire the trainee teachers' (2020-2022 & 2021-2023 batches) attitude towards the forced transition from offline mode to online mode during the time of pandemic and natural disaster. It is to be taken into consideration that the present teacher education curriculum has been thoroughly revised following NCTE Regulations, 2014 where engagement with field and prolonged school internship have been given utmost importance. Closure of teachers' training colleges in West Bengal during compulsory lockdown period resulted in a shift from the traditional face to face offline curriculum transaction to online teaching-learning practices. The researcher went through different online research journals on the topics with which the present study is related. According to Anastasi (Psychological Testing, Seventh Edition 2008, p. 418) an attitude is often defined as a tendency to react favorably or unfavorably toward a designated class of stimuli. Freeman (Theory and Practice of Psychological Testing, 1965, p.596) said that an attitude is a dispositional readiness to respond to certain situations, persons, or objects in a consistent manner which has been learned and has become one's typical mode of response. In the present study, the term "attitude" has been used to mean a settled way of thinking or feeling about something. It requires individuals to make a decision on their level of agreement on a five-point scale (viz. Strongly Agree, Agree, Undecided/Neutral, Disagree & Strongly Disagree) with each of the statements in the scale. Online teaching and learning imply that majority of the coursework will be done through the internet in terms of Whatsapp, Messenger, Email, Google Classroom, Google Meet, etc. But it does not imply that there is no face-to-face interaction

between students and teachers, but communication is primarily online. On scrutiny, it appears that although several researchers working in this field there are some gap areas in the research related to trainee teachers' attitudes towards online teaching-learning practices, especially in the event of a covid-19 pandemic situation. To fill up the gap, the present research work was attempted.

OBJECTIVES OF THE STUDY

The following major objectives were set up for the present study :

1. To develop and standardize a scale for assessing attitude of the trainee teachers towards online teaching-learning practices.
2. To study and compare the attitude of the trainee teachers towards online teaching-learning practices with respect to residential zone (urban, rural, semi-urban), gender (male, female), stream (science, social science) and nature of institutions (Government, Government-aided, self-financed institutions).
3. To study the interaction effect, if any, among the four selected categorical variables (viz. gender, residential zone, stream & nature of institutions).

HYPOTHESES OF THE STUDY

Based on the major objectives the following null hypotheses were framed for the present study.

H₀1: There is no significant difference in trainee teachers' attitude towards online teaching-learning practices with respect to:

- a. Gender
- b. Nature of teachers' training institutions.
- c. Residential zones.
- d. Streams.

H₀2: There is no significant interaction effect on trainee teachers' attitude towards online teaching-learning practices with respect to:

- a. Gender and institutions
- b. Gender and residence
- c. Gender and stream
- d. Institutions and residence
- e. Institutions and stream
- f. Residence and stream

- g. Gender, institutions and residence
- h. Gender, institutions and stream
- i. Gender, residence and stream
- j. Institutions, residence and stream
- k. Gender, institutions, residence and stream

SAMPLE

All the trainee teachers of secondary teachers' training institutions of West Bengal were selected as population for the present study. From the list of NCTE recognized Secondary Teachers Training Institutions in West Bengal, 7 institutions were selected randomly from Kolkata, Howrah & Hooghly districts (5 institutions for final study and 2 institutions for pilot study). After getting the institutional approval from different college authorities, the researchers selected 369 trainee teachers randomly. The selected trainee teachers of 2020-2022 & 2021-2023 batches were given proper instructions for giving responses before the commencement of data collection session in each teachers' training institutions. The demographic characteristics of the sample are shown in Table 1.

Table 1. Demographic characteristics of the sample

Category	Sub Category	N = 369	Percentage
Gender	Male	109	29.54
	Female	260	70.46
Residential Zone	Urban	182	49.32
	Rural	159	43.09
	Semi-Urban	28	7.59
Institution	Government	7	1.90
	Government Aided	82	22.22
	Self-financed	280	75.88
Stream	Science	129	34.96
	Social Science	240	65.04

It is to be noted that prior to final data collection, a different sample of 150 trainee teachers from 2 institutions were selected to standardize the tools used for final data collection.

TOOL & TECHNIQUE USED

A self-made English version attitude scale was developed to measure the attitude of the trainee teachers towards online teaching — teaching-learning practices during 2nd and 3rd wave of Covid-19 pandemic. Initially the draft survey format was prepared comprising of 35 items with corresponding responses arranged in a 5 point Likert type of scale. After receiving the views from the experts, the draft scale was revised and finalized for try out. The revised draft attitude scale was comprised of 30 items with corresponding responses like “strongly agree”, “agree”, “neutral”, “disagree”, “strongly disagree”.

Pilot Survey

A sample comprising 150 trainee teachers (Male=80, Female=70) were selected from 2 secondary teachers’ training institutions. The pilot survey was done with the following objectives :

- a) Rectification of instructions before finalization
- b) Determination of appropriateness of the test items
- c) Calculation of reliability and validity of the test items
- d) Finalization of norms

Item Validity

Item validity was determined by computing item total correlation for each item. Here Pearson Product Moment correlation technique was employed. It shows how well the item is measuring that function which the test itself is measuring. The results are given in Table 2.

Table 2 : Item total correlation of each item of Teaching Aptitude Test (N = 150)

Item	Item total correlation	Item	Item total correlation	Item	Item total correlation
1.	0.109*	2.	0.165*	3.	0.434**
4.	0.353**	5.	0.525**	6.	0.478**
7.	0.198**	8.	0.564**	9.	0.650**
10.	0.566**	11.	0.380**	12.	0.666**
13.	0.620**	14.	0.619**	15.	0.549**
16.	0.554**	17.	0.341**	18.	0.571**
19.	0.592**	20.	0.636**	21.	0.663**

22.	0.543**	23.	0.544**	24.	0.378**
25.	0.496**	26.	0.155*	27.	0.110*
28.	0.121*	29.	0.108*	30.	0.274**

* $p < 0.05$ ** $p < 0.01$

All the items (in Table 2) correlated significantly with total score. However, item 1, 2, 26, 27, 28 and 29 of the attitude scale contributed comparatively little to the total score. But since the contents of these items were rated very high by the experts and these are not at least negatively correlated, the items were retained in the final scale. Good item validity is itself a guarantee of test validity. Since no external criteria were available and since all the items were scanned and rated by the experts, the content validity was also ensured for the attitude scale.

Reliability

Reliability co-efficient was determined by Cronbach Alpha method and was found to be 0.792 which is quite good to be accepted for social study.

Norms

Norms were determined in terms of Mean and Standard Deviation for all the sub-groups of sample and combined group which are given in the following tables:

Table 3 : Mean & Standard Deviation of the Combined Group

Mean	Standard Deviation
82.39	10.41

Table 4 : Mean & Standard Deviation of the Sub Groups

Categorical Variables		Mean	Standard Deviation
Gender	Male	84.22	10.61
	Female	81.63	10.25
Residential Zones	Urban	82.25	11.66
	Rural	82.79	8.88
	Semi urban	81.12	10.39

Nature of Institutions	Government	87.71	10.44
	Government aided	78.44	8.78
	Self-financed	83.42	10.58
Streams	Social Science	82.44	9.86
	Science	82.32	11.41

Statistical Technique Used

Data analysis was carried out with the help of Descriptive Statistics, Pearson's Correlation, t-test, One Way ANOVA and Factorial Analysis of Variance.

On the basis of above interpretation, the final scale for measuring the attitude of the trainee teachers towards online teaching — teaching-learning practices were prepared and administered over 369 randomly selected trainee teachers of five secondary teachers training institutions of West Bengal.

RESULT AND DISCUSSION

The null hypothesis H_0 was tested by using different statistical techniques (t-test and one-way ANOVA) and the results are represented below:

Table 5 : t-test result for difference between male and female trainee teachers in their attitude towards online teaching-learning practices

Dependent Variable	Independent Variables	N	Mean	SD	t-Value	df	Sig.
Attitude	Male	109	84.2202	10.61302	2.191	367	0.029*
Scores	Female	260	81.6308	10.24687			

* $p < 0.05$

The result of independent samples t-test reflects that the calculated t-value (2.191) is significant at 5% level of significance. So, it is clear that there exists 'significant' difference between male and female trainee teachers in their attitude towards online teaching-learning practices. The mean value of Male trainee teachers shows more positive attitude (Mean = 84.22) than female (Mean = 81.63). This may be due to the fact that male trainee teachers have received more easy access of digital instruments and remained less busy in their household activities than their female counter part.

Table 6 : One-way ANOVA result of attitude towards online teaching-learning practices based on nature of the teachers' training institutions.

Sources of Variances	Sum of Squares	df	Mean Square Variance	F	Sig.
Between Group	1776.338	2	888.169	8.532	.000**
Within Group	38097.895	366	104.093		
Total	39874.233	368			

**p<0.01

The result of one-way ANOVA revealed that the calculated value of F (8.532) is significant at 1% level of significance. So, it is clear that there exists a significant difference among the trainee teachers of Government, Government aided and self-financed teachers' training institutions in their attitude towards online teaching-learning practices. The mean value of trainee teachers of Government teachers' training institutions shows a more positive attitude (Mean = 87.71) than that of self-financed (Mean = 83.42) followed by Government aided (Mean = 78.44) teachers' training institutions. This may be due to the fact that trainee teachers from different categories of institutions do not have equal access to the digital platform for online teaching-learning practices. This result is not conclusive in nature but rather more in-depth study with a larger sample size is required to reach any conclusive decision.

Table 7 : One-Way ANOVA result of attitude towards online teaching-learning practices based on residential zones of the trainee teachers

Sources of Variances	Sum of Squares	df	Mean Square Variance	F	Sig.
Between Group	114.136	3	38.045	.349	.790
Within Group	39760.097	365	108.932		
Total	39874.233	368			

The result of one-way ANOVA reflects that the calculated value of F (.349) is not significant at 5% level of significance. So, it can be interpreted that there is no significant difference among the trainee teachers from urban (Mean = 82.25), rural (Mean = 82.79), and semi-urban (Mean = 81.12) areas in their attitude towards online teaching-learning practices. This may be due to the fact that attitude of an individual is an intrinsic feature and not influenced by his/her residential zone.

Table 8 : t-test result for difference between trainee teachers in their attitude towards online teaching-learning practices based on academic discipline of the trainee teachers.

Dependent Variance	Independent Variables	N	Mean	SD	t-Value	df	Sig.
Attitude Scores	Social Science	240	82.4375	8.77440	.105	367	.916
	Science	129	82.3178	10.57628			

The result of independent sample t-test reflects that the calculated t-value (0.916) is not significant at 5% level of significance. So, there exists no significant difference between trainee teachers with social science stream (Mean = 82.44) and trainee teachers with science stream (Mean = 82.32) in their attitude towards online teaching-learning practices. Similarly, this may be due to the fact that being an intrinsic feature attitude of the trainee teachers may not be influenced by the streams or academic disciplines they choose.

The interaction effects (H_0) among different variables under study were studied statistically and the results are represented below :

Table 9 : Summary of ANOVA of scores on trainee teachers' Attitude towards online teaching-learning practices in relation to gender, residential zone, institutions and stream.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	5665.783	27	209.844	2.092	.001
Intercept	285037.279	1	285037.279	2841.336	.000
Gender (A)	122.225	1	122.225	1.218	.270
Institutions (B)	1357.756	2	678.878	6.767	.001
Residence (C)	201.575	3	67.192	.670	.571
Stream (D)	83.805	1	83.805	.835	.361
Gender * Institutions	24.657	2	12.329	.123	.884
Gender * Residence	198.499	2	99.250	.989	.373
Gender * Stream	16.207	1	16.207	.162	.688
Institutions * Residence	949.354	3	316.451	3.154	.025

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Institutions * Stream	562.520	2	281.260	2.804	.062
Residence * Stream	318.260	2	159.130	1.586	.206
Gender * Institutions * Residence	107.368	2	53.684	.535	.586
Gender * Institutions * Stream	167.003	1	167.003	1.665	.198
Gender * Residence * Stream	11.017	1	11.017	.110	.741
Institutions * Residence * Stream	266.890	2	133.445	1.330	.266
Gender * Institutions * Residence * Stream	67.374	1	67.374	.672	.413
Dependent Variable : Attitude towards online teaching-learning practices					

The result of Factorial ANOVA indicates a significant first order interaction effect between institutions and residential zones (B x C). Here, it is seen that the calculated F value (3.154) is significant at 5% level of significance. This may be due to the fact that the combined effect of these two independent variables influences the dependent variable, i.e. the attitude of the trainee teachers towards online teaching-learning practices. On the other hand, the findings also reveal that except institutions and residential zones there is no interaction effects of other combinations. So, our present treatise fails to establish any significant interaction effect between the variables under study except institutions vs. residential zones of trainee teachers.

CONCLUSION

Results clearly revealed that significant difference was observed among the trainee teachers' attitude towards online teaching-learning practices with respect to gender (male & female) and nature of institutions (Government, Government aided & self-financed). On the other hand, no such significant difference was observed among the trainee teachers with respect to residential zones (urban, rural & semi urban) and streams (social science & science). This study also indicated a significant interaction effect between teachers' training institutions and residential zones on

trainee teachers' attitude towards online teaching-learning practices. Probable constraints in smooth functioning of online teaching-learning practices during the pandemic situation were also noticed like - the lack of uninterrupted internet services, non-availability of smart phone or laptop or desktop, inability to think about the situation more critically, the lack of proper planning from the teacher educators' end with respect to conducting online classes, the absence of positive attitude towards teaching-learning via online mode, inability in handling electronic gadgets used for online teaching-learning purpose, the lack of encouragement and support from families and teacher educators. Mostly the secondary teachers' training institutions seem to be habituated with traditional face to face teaching and learning activities and the trainee teachers are also accustomed to the system. In case of natural calamities or pandemic situation where online teaching-learning is inevitable, it is advisable that higher education institutions should think over various instructional strategies for online mode and offer flexible teaching and assessment policies, concerned teacher educators should develop slow voice speech, practice voice modulation, develop interactive online classes, share class materials, try to enhance students' learning abilities via online mode and get their feedback after the completion of each online classes. Higher education institutions should make collaboration with telecommunication industries to overcome internet related issues (Mahmood, 2020). The Organization for Economic Cooperation & Development (OECD, 2020) suggests in favour of developing attitudes towards online learning to overcome some of the potential challenges such as remaining focused during online classes or maintaining sufficient motivation, providing teachers with support to incorporate technology effectively into their teaching practices and supporting teachers' training programmes about the use of digital resources for effective and efficient pedagogical practices and thereby enhancing teaching-learning practices through online mode. The Covid-19 crisis compelled the whole education system to adopt alternative mode of education and it was a forced transition from traditional face to face mode. Further research should be conducted with respect to enhancing the effectiveness of the present teacher education programme via blended mode as an alternative pathway.

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ECO-SAN : AN EMERGING SUSTAINABLE TECHNOLOGICAL APPROACH IN EDUCATIONAL INSTITUTIONS

Sourav G. Hazra

B.Ed. Student, Ramakrishna Mission Brahmananda College of Education, Rahara, Kolkata-
700 118, West Bengal, India

Dr. Sujoy K. Bag

Assistant Professor, Department of Ecological Studies and International Centre for Ecological
Engineering, University of Kalyani, Kalyani, Nadia, West Bengal, Pin-741 235, India

Dr. Susmita Lahiri

Assistant Professor, Department of Ecological Studies and International Centre for Ecological
Engineering, University of Kalyani, Kalyani, Nadia, West Bengal, Pin-741 235, India

ABSTRACT

Inadequate water and sanitation facilities in the school environment have been reported as a major hindrance towards achievement of Goal 2.A and Goal 6 of worldwide Sustainable Development Goals (SDG). There is a growing need and pressure to provide sound educational tools in order to encourage capacity building and to support the world-wide implementation of ecological sanitation. This eco-friendly sustainable technology is based on the principle of safe reuse of nutrients of the human wastes in agricultural production, thus closing the loop of the human wastes production, treatment and reuse. This sanitation system not only intends to provide organic nutrient resources for ecological soil nutrient management but also gives sanitation related protection to school children. The technology is based on development of urine diversion dry toilets, biogas generation and composting of human waste generated night soil. Considering the poor sanitation and drinking water facilities of mainly rural Indian schools, various existing ecosan toilet designs can be potentially replicated in school premises with proper guidance from scientists, engineers and administrations in order to address the sanitation related problems with special reference to girl students and drinking water and hygiene problems. The main challenge for successful implementation of ecosan is to eradicate traditional belief and custom of hatred towards faces and lack of training and awareness for the handlers and children for its operation and benefits.

Keywords: Eco-san, Waste to resource, Urine diversion toilet, School sanitation.

INTRODUCTION

The United Nations Millennium Development Goal 2.A is to ensure that the children everywhere will be able to complete a full course of primary schooling by 2015 (Tooley, et. al., 2007). Inadequate water and sanitation facilities in the school environment have been reported as a major hindrance towards achievement of this goal. Many schools in developing and developed countries lack adequate water and sanitation services, with associated potential detrimental effects on health and school attendance (Barrington, 2016). The recently adopted worldwide Sustainable Development Goals (SDG) that aim to reduce this problem and extend the access to basic sanitation (Johnson & Land, 2017) safe agricultural reuse of nutrients can provide a strong motivation for long-term adoption of improved sanitation among rural small holders (Dickin et al., 2018). There is a growing need and pressure to provide sound educational tools in order to encourage capacity building and to support the world-wide implementation of ecological sanitation. There is also a need for a broad analysis of existing curricula and education systems in both formal educations at all levels and continuing education in water and environment related disciplines, with a view to introducee the holistic concept of ecological sanitation. In developing countries and countries in transition, ecological sanitation education and training is even more important and urgent, especially in the context of achieving the Millennium Development Goals for sanitation and environmental sustainability (Langergraber & Muellegger, 2005).

The connection to ecological sanitation (Eco-San) that allows for the safe recycling of nutrients to crop production in such a way that the use of non-renewable resources is minimized. In a specific local setting, the eco-san aims to meet socioeconomic demands, prevent surface and ground water contamination, sanitise urine and faeces, recover nutrients for food production, and conserve resources like water and energy. The applied technologies may range from natural waste water treatment techniques to compost toilets, simple household installations to complex, mainly decentralized systems (Mahmood et al., 2013). Therefore, EcoSan is not just a poor people solution, with low standard; it is more a number of appropriate solutions for different specific local situation. In order to support Sustainable Development Goals 2 (zero hunger), 6 (clean water and sanitation for everyone), and 13 (climate change solutions), this closed loop sanitation system not only intends to provide organic nutrient resources for ecological soil nutrient management but also gives sanitation related protection to school children. In order to gain knowledge for its acceptance and implementation potential in Indian rural sector, the present review has been done.

OBJECTIVE OF THE STUDY

There is an urgent need for better water and sanitation systems, not just in family residences but also in educational institutions. It should enable the end-users to develop, plan and implement eco-sanitation systems that are hygienically safe, socially acceptable, economically feasible,

environmentally sound and technically appropriate. One of the finest places to teach the younger generation about the value of good cleanliness and the advantages of better sanitation is probably in the classroom. Therefore, it seems sense to include a training element for better cleanliness in the school itself (Shangwa & Morgan, 2009). The majority of government schools in rural and backward areas of India struggle with poor sanitation system, which might lead to several illnesses of the students. Therefore, this study will help us to discuss the implementation and adoption potential of emerging Ecosan technology which might resolve this situation by providing good environmental feedback.

METHODOLOGY

For the purpose of the study an extensive literature review has been done and related information was collected, synthesized, analyzed and finally summarized for documentation from the critically screened literature.

BASIC PRINCIPLE OF ECOLOGICAL SANITATION

Ecosan is based on the principle of treating the human wastes for pollution and health hazard prevention by using the reuse and recycling principle to use its nutrients in agricultural production thus making the concept a sustainable one (Langergraber & Muelleger, 2005). The “sanitises and recycles,” or closes the loop of the circular flow of nutrients, by adhering to the three guiding principles of (a) Preventing pollution rather than trying to control it; (b) Treating urine and faeces; and (c) Using the safe treated products for agricultural use (Hazra et al., 2023), (Fig 1).

Eco-sanitation works on principle of self-designing the nature based function of utilizing materials from one living system by another living system (Jana et al., 2012) with a supplementary advantages of conserving water, energy, and reducing pollutants (Pandey, 2017; Maurya, 2012). Returning sanitized human urine and faeces to the soil helps to restore the natural cycling of life-building elements, which has been disturbed by conventional sanitation methods (Jonsson et al., 2005) with subsequent nutrient from waste being recycled to crop growth (Jothimani, 2012; Devadula et al., 2015).

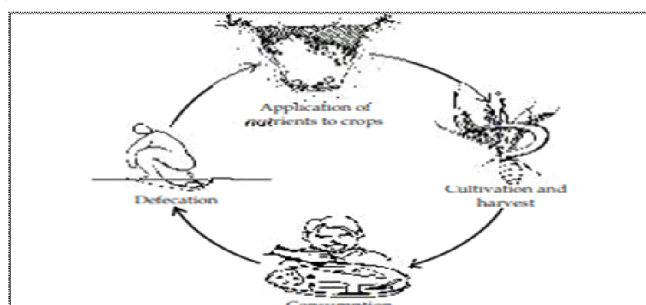


Fig 1: The Closing Loop of Ecosan (Source: Chariar & Sakthivel, 2011)

WASTE TO RESOURCE CONCEPT

Hazardous microbes in human excreta must be removed in order to maintain “resource flows” in the context of sanitation with “reuse products” or “other outputs” and avoid significant barriers to its commercialization and nutrient recycling to soil in regions with significant horticulture export (HEDF, Moya et al., 2019; Tixier & De Bon, 2006). There are an increasing number of treatment methods available to make excreta safe and controllable for re-use (Jensen et al., 2008) that improve individual well-being and greater sustainability.

i) Urine Diversion & Dehydration Methods

The easiest treatment for transforming faeces into a product that is acceptable for reuse or disposal is dehydration by adding dry organic material (such as lime and ash) and long-term storage at a high ambient temperature (Eq 1); (Senecal & Vinneras, 2017). Dehydration can be done on-site in dehydration vaults or off-site in dehydration beds or bags that are humidity-protected (Tilley, 2014). On-site dehydration vaults collect, store, and dry (dehydrate) faeces (e.g. in double-vault UDDTs; Spitzer et al., 2018). Increase of temperature (>35%), pH (alkaline treatment) and minimisation of the moisture content (<25%) can significantly accelerate the process. Lime and ash will boost the pH, whereas sawdust will absorb moisture (Deegener et al., 2016).

- *Faecal matter + High Tem (35 to 40°C) → Dehydrated Product Eq 1*

ii) Energy recovery

According to Jaeger & Machry, 2014, thermo dynamic analysis investigates the potential of human waste as an energy for self-sustaining sanitary systems in the future. According to Onabanjo et al. (2016), the “Nano Membrane Toilet (NMT)” is an original, small-scale sanitary solution that handles human waste locally, using a small-scale gasifier to produce syngas from organic or fossil-based materials at high temperatures (>700°C) Eq 2, (Fig 2) by utilizing the chemical energy of settled solids from human excreta, which include wet faecal matter, despite their high moisture content.

- $C_6H_{12}O_6 + O_2 + H_2O \rightarrow CO_2 + (CO + H_2) \text{ syngas} \dots \text{Eq 2}$

Through this process it is observed that energy recovery from human excreta and kitchen waste can offset the energy consumption of the sanitation system and the energy surplus can even be $1067.70 \text{ kJ} \cdot \text{PE}^{-1} \cdot \text{day}^{-1}$. (Xu et al., 2021). Moreover, Liu *et al.*, 2014 has proposed the self-sustained system for the conversion of settled solids from human excreta to power that utilises plasma gasification and solid oxide fuel cells with specific net power output of 194.4 to 357.3 Wh/kg settled solids, depending on whether the faecal matter was dried or not prior to plasma gasification (Hanak et al., 2016).

In Indonesia there had been a report of biogas production of 2,350.7 MJ/day or 652.97 kWh/day from human excreta (2500 kg/day) which was further used for energy consumption (Andriani et al., 2015) and if hygienization is ensured, the end product (decomposed sludge) can be used as a fertilizer/soil conditioner (Di Matteo et al., 2017) in agriculture or horticultural field.

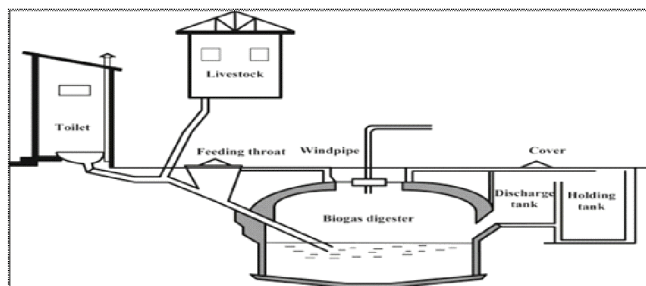


Fig 2: Three Link Biogas Toilet (Source: Wang et al., 2016)

iii) Organic farming

Human waste often known derogatorily referred as 'night soil' contains the major plant nutrients in different proportion (Table 1) which is being treated and used as a possible source of organic compost in agricultural field with high crop yield in garden of school/universities. However, preserved urine has more potential than fresh urine because the urea within promotes microbial activity and causes the urea to be converted to nitrate, which is then ingested by plants in agricultural fields or by phytoplankton in fish ponds (Jana et al., 2012; Hazra et al., 2023).

Table 1 : Nutrient Potential of Ecosan waste

Plant Nutrients	Urine	Faeces	Grey water
Nitrogen (N)	80 - 90%	12 - 15 %	8 - 10 %
Phosphorus (P)	50 - 55 %	25 - 30 %	18 - 20 %
Potassium (K)	60 - 70%	25 - 30 %	12 - 15%
Other's substance	creatinine (6%), ammonia (7%) free amino acids, Ca^{2+} , K^+ , Na^+ , NH_4^+ and SO_4^{2-} , PO_4^{2-} and Cl^-	Magnesium (Mg) and selenium (Se), Carbon (40 - 45%), CaO (4 - 5%)	$NO_3^- < 0.1 - 21.4$, $Na - 29 - 230 \text{ mg/l}$
References	Kirchmann & Pettersson, 1995; Hazra et al., 2023; WHO, 2006; Hazra et al., 2023		

In nature, microorganisms and other soil biota will typically breakdown organic waste or materials (such as leaves, food scraps, human excreta and others) by the process of composting. Composting can be done in latrine pits or separate heaps by the decomposition of organic waste such as faeces, toilet paper, vegetable peels and wood shavings or mulch. This method balances the carbon-nitrogen ratio and reduces nitrogen levels. A second pit should be available for composting when full, and the final product should reach 55-60°C for several days to make it safe for use as a fertilizer. Another composting method of vermicomposting involves culturing earthworms (*Eisenia foetida*) outdoors in beds or confined chambers in the presence of waste materials, reducing carbon and nitrogen levels through microbial activity (Yadav et al., 2010). To address the detrimental effects of organic waste and to protect the school environment, sustainable organic waste management becomes crucial.

DESIGNS OF ECOSAN TOILETS

Human faeces can be utilised to make fertiliser and biogas since it is a rich source of nutrients. Thus to use the potential of human excreta, a newer form of toilets has been developed. Among these, the following are the toilets that may be employed in educational institutions most effectively:

Dry Toilets

Ecological sanitation, often known as “dry box toilets,” has been successfully implemented in a number of developing nations, including China, Japan, Mexico, Ecuador, and, more recently, Zimbabwe and South Africa. In this type of toilet human excreta (both urine and faeces or urine/faeces) is collected into a single and multilayered chambered tank and continuous flushing with dry organic material such as lime and ash. The basic functioning principle of a dry toilet is the fact that liquids are separated from the solids, either from source (by UDDT) or later by composting toilet (Aburta et al., 2020).

Mixed Type Toilet : Many countries have been implemented a special kind of dry toilet called “Mixed Type Dry Toilet” with a fundamental goal to handle both faeces and urine that should be returned to the soil by generating the most effective humus possible. There are varieties of mixed toilet briefly described below:

a. Arborloo : Arborloo is a shallow pit (approximately 1.0 to 1.5 m deep) i.e. filled with excrement and dirt/ash and then covered with soil and a tree planted on top of the nutrient-rich pit will vigorously grow (Sklar & Faustin, 2017). Many poor countries, including as Zimbabwe, Malawi, and Africa adopt arborloos in rural regions.

Advantage : Low cost, lower risk of pathogen transmission.

Disadvantage : New pit must be dug; the old pit can't be reused, not suitable with a high groundwater table.

b. Tree Bog : A tree bog is essentially a managed compost heap with moisture or nutrient-hungry trees (willow, berch etc.) added to improve its performance. It may be called a permaculture design since it is a system for converting urine and faeces to biomass without the requirement for excreta handling, mainly practised in U.K (Deakin, 2009).

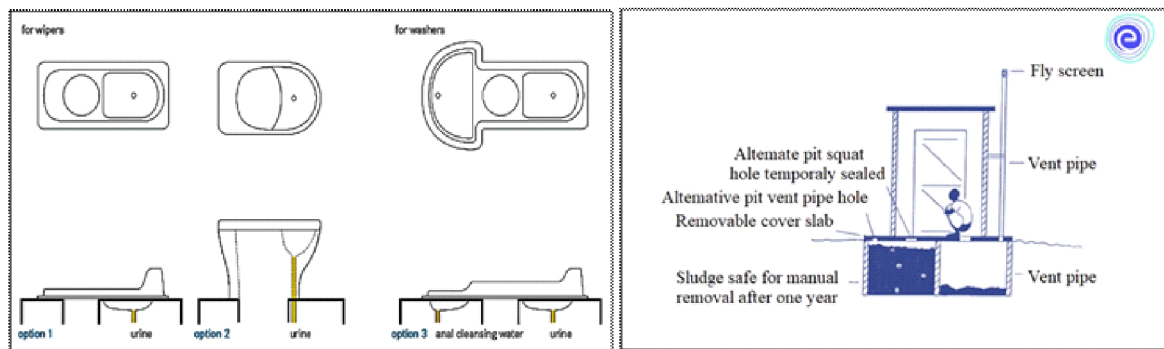
Advantage : Simple technique to use, conservation of water, end product can be used as a good fertilizer.

Disadvantage : The planted species should be nutrient “hungry” and ideally be harvestable too.

Separating / Urine Diverting Dry Toilet : A urine-diverting dry toilet (UDDT) is a form of dry toilet with urine diversion that may be utilized in a number of settings across the world to offer safe, affordable sanitation (Zhuang et al., 2021). The UDDT is designed in such a way that urine is collected and drained from the front of the toilet, while faeces are discharged via a wide chute (hole) at the back (Fig 3). Depending on the collection and storage/treatment technology that follows, drying material such as lime, ash or earth should be added into the same hole after defecating (Trimmer, et al., 2016).

A specifically constructed pedestal diverts the urine at the source, preventing it from mixing with the faeces. A pit isn't required because the entire building can be built above ground or even inside the home (Fig 4). The ash absorbs moisture and helps to keep odours and insects at bay. Desiccated faeces are a wonderful soil conditioner, and urine, which is high in nitrogen, phosphate, and potassium, is an excellent source of fertiliser (Lalender et al., 2013).

Fig 3 & 4 : Schematic Representation of Urine Diverting Dry Toilet (Source : Tilley et al., 2014 & Mnkeni et al., 2009)



Emerging Eco-toilets : Recently, new eco-toilets have emerged that use extremely little water, allowing for greater cleanliness and water conservation that may also use in modern school and universities. These type of toilets are mainly of two types :

- **Microflush Toilet** : The micro flush toilet is a low-cost toilet that is sustainable, ecologically friendly, odour-free, and fly-free that isolates waste and flushes with a few ounces (1 cup) of grey water (Laundry and Toilet flushing) & from a previous user's hand wash. The solids are composted in an aerobic process that is aided by simple earthworms (*Eisenia foetida*), and other macro-organisms, leading in significant bulk reduction and pathogen elimination, a procedure that has outperformed standard latrine microbial composting (Davis, et al., 2013).
Advantage : Less amount of water required, energy saving, end product can be used as compost or vermicomposting.
Disadvantage : Installation cost is comparatively high, proper knowledge should be required.
- **Vacuum Toilet** : Vacuum toilets are flush toilets that utilize suction to remove faeces and urine, using the least amount of water possible (0.5 - 1.5 litres). It provides the same degree of comfort as regular flush toilets while also saving money because to the reduced quantity of flush water used. These systems are applicable both in large and small buildings, trains, ships and airplane (Gao, et al., 2019).
Advantage : Flexible and convenient, facilitates reuse of urine and faeces, hygienic.
Disadvantage : Depended on electric power supply, bulky material (i.e. sanitary napkins) can lead to clogging.

PRESENT SANITATION STATUS IN EDUCATIONAL INSTITUTION

Every child has the right to a high-quality education, which includes having access to WASH services while they are in school for drinking water, sanitation, and hygiene. A large amount of a child's day is spent at school, where water sanitation and hygiene (WASH) services may have an influence on girls' learning, health, and sense of dignity. The Sustainable Development Goals' inclusion of WASH in schools (targets SDG 6) shows that their significance as essential elements of a "safe, non-violent, inclusive, and effective learning environment" and as part of "universal" WASH access, which emphasises the need for WASH outside of the home, is being recognised more and more (WASH, 2018).

Inadequate water supply, sanitation, and hygiene conditions in educational institutions, particularly schools, can negatively impact health and learning outcomes, especially for girls (Sinha & Paul, 2018). These conditions increase children's susceptibility to environmental health hazards, such as helminthes infections, long-term exposure to chemical contaminants, and diarrheal diseases (El-Nadi et al., 2017). In 2016, 66% of schools had improved single-sex sanitation facilities, while 12% had limited or unimproved facilities. 23% of schools worldwide had no sanitation service or relied on unimproved facilities (UNICEF, 2018).

On this basis it is estimated that over 620 million children lack basic services and limited or no sanitation at their schools, with 53% of schools having basic hygiene facilities. In 2016, 11% had

limited services, and 36% had no handwashing facilities. Over 850 million children lack basic services and limited or no handwashing facilities. Lack of water and sanitation facilities for menstruation in schools leads to discomfort and avoidance (Sivakami et al., 2019). Interventions like water and hygiene can decrease absenteeism among girls, especially in developing countries with high drop-out rates. Ensuring women and girls can continue attending educational environments is crucial for achieving the Millennium Development Goals of universal education and promoting gender equality and empowerment.

However, it is studied that nearly 89% of co-education schools have at least one toilet unit for boys and girls, while only 32% have separate toilets for teachers. 83% of rural and urban schools lack accessible toilets. Only 76% of rural school toilets had door with latch/bolt, 13.3% lack proper doors, and 5% lack roof, ventilation, and natural light. Hand washing facilities are accessible to all children. There is a shortage of teachers trained in sanitation and hygiene education. But as a result of COVID-19, the future of education depends on the provision of water, sanitation, and hygiene services (Ashraf et al., 2020).

IMPORTANCE OF ECOSAN IN EDUCATION

According to the Bellagio Principles, 2000, “universal access to safe environmental sanitation, within a framework of water and environmental security and respect for the economic value of wastes” ensures human dignity, quality of life and environmental security at household level which should be responsive and accountable to needs and demands in the local and national setting. Based on this principle, Ecosan education aims to equip people with the skills to build, plan, and execute hygienic, socially acceptable, economically viable, environmentally sound, and technically adequate eco-sanitation systems (Werner et al., 2009). Therefore, integration of many sectors in urban environmental planning and practise should be covered in ecosan education. Even while the fundamentals of ecological sanitation are “universal” in the sense that they apply to all projects, different stakeholders engage diverse target groups who have varying histories, goals, and capacities for accepting the “new paradigm” of ecological sanitation.

APPLICATION OF ECOSAN IN EDUCATION SECTOR

A. Implementation of UDDT in organic farming: Ecosan technologies, such as UDDT toilets, can be built and maintained together with students and teachers (Shangwa & Morgan, 2009), arborloo toilets on the other hand, are often suitable for schools in rural areas. UDDTs are more appropriate than pit latrines in densely populated areas, in regions with a high groundwater table, hard rock, crumbling earth, or seasonal flooding because they do not rely on soil infiltration. In school gardens, students can learn how to increase the yield of vegetables by safely applying treated excreta (such as urine, dried faeces, compost, irrigation water) as fertiliser and soil conditioner through ecosan technology (Ingle et al., 2009). If organic waste is not properly

managed, it may have a detrimental effect on both the school's environment and the pupils' level of health. Therefore, a solution to the issue of using organic waste is required in order to promote a healthy and clean environment and it can help schools economically (Cicilia et al., 2018).

- Established in 1997, the ACTS Rayasandra Campus for Higher Education in Bangalore, India, houses the ACTS Academy for Higher Education, male and female dormitories, a guest house, staff housing, a kitchen and dining area, and a vocational training facility (June 1st, 2006). Through installing UDDT, they successfully achieve sustainability by producing organic fertilizer and Ecosan light in addition to basic sanitary services (GTZ, 2006).
- Adarsh Vidya Mandir School in Badlapur, Maharashtra, will provide new sanitary facilities for students and staff (drafting in August 28th, 2006). Two alternatives include ceramic squatting pans and a two-storeyed urine-diversion dehydration toilet block. The school plans to use digested sludge and urine collected from urinals on agricultural plots, with potential cooperation with local universities (GTZ, 2006).

B. Potential source of Bio-fuel : Pour-flush toilets connected to a biogas plant and additional treatment components are examples of Ecosan technologies that can provide biogas for cooking in place of either firewood (preserving the vegetation surrounding the school in the process) or saving money by eliminating the need to purchase LPG (liquefied petroleum gas) cylinders (Ingle et al., 2009).

Based on Ecosan application in Adarsh college - Badlapur, 2009 it is observed that the maximum estimated output of biogas is 6.8 m^3 , which is equal to 4.8 m^3 of earth gas or 4 litres of diesel. LPG would typically be needed to power the gas cooker, but when biogas is utilised instead, LPG is conserved. As a result, these systems contribute to energy conservation through the use of biogas, which powers a gas cooker in school kitchen and at the neighbouring Ecosan Exhibition Hall (Barreto dilon, 2010).

C. As an awareness training programme: The University of Kalyani's International Centre for Ecological Engineering (ICEE) aims to provide environmental awareness training, courses, and research opportunities in ecological engineering, particularly in ecological sanitation. The proposed sanitation concept includes urination-separation dehydration toilets (UDDT) urine collection, and greywater reuse for gardening and irrigation along with potential source of organic fertilizer from human excreta (GTZ, 2006; Pynnonen, 2012).

- 1st Draft & 2nd Draft, report on the Ecosan Prefeasibility Study "International Centre of Ecological Engineering at the University of Kalyani, West Bengal" (July 14th, 2006) & (August 27th, 2006) respectively.

Through this training program, they have imparted comprehensive knowledge of Ecosan, a waste to resource concept with favourable environmental feedbacks.

D. Ecological sanitation in education and training : The inability to fulfil the rising demand for the adoption of ecological sanitation is currently seen as a major limiting issue. In India, the government is planning to introduce sustainable sanitation as part of the curriculum in schools starting with the 10,000 Central Board of Secondary Education (CBSE) schools through its Urban School Sanitation Program (www.schoolsanitation.com). Here a whole range of measures and activities will be included such as : • Awareness raising through inclusion of sanitation as curriculum in the schools • Preparation of school sanitation manual as a handbook of best practices with reuse of water and advanced waste management in schools • Sanitation rating of schools and appreciation through National Urban School Sanitation Awards • Orientation program for the school principals • Inclusion of sanitation as a requirement for school accreditation/affiliation by CBSE • Creation of the brand value for the sanitation initiative by having a sanitation brand ambassador and sanitation week. The long term goal is to ‘Educate them young’ to achieve improved sanitation (Panesar et al., 2006).

CHALLENGES FACED

Every year, students are rotated and replaced in schools, along with teachers and school administration on occasion. Therefore, lessons learned about how to operate and maintain UDDTs, anaerobic treatment facilities, and how to use biogas, water, and nutrients properly could be forgotten by the school. Therefore, it is imperative that this information be continuously transferred to newly arriving students and professors in order to prevent mismanagement and the abandonment of ecosan installations. Therefore, it is advised to incorporate ecosan and sustainable sanitation into as many school events as you can to help students incorporate them into their daily lives.

The main risks associated with ecosan result from either mismanagement of the facilities (by, for example, not allowing enough storage time or allowing water into a dehydrating system), or poor construction of facilities. The outcome of both of these is that the pathogen content of the waste is not reduced to safe levels, putting a selection of stakeholders at risk, namely those responsible for emptying the facilities. Moreover, untrained users can’t continue the safe operation of ecosan toilet facilities in schools. Handling human waste should be done by faecophilic society people and not faecophobic people for its sustainability. Another potential barrier to successful ecosan is the lack of school communities’ willingness to take part.

CONCLUSION

The thrust on improving our environment by proper sanitation management is crucial in our battle to clean up our rivers, lakes, and seas, which mostly receive the major bulk of untreated wastewater. Thus, closing the resource loops can finally prevent the conflict of planetary

boundaries. Even though there is a great need to increase sanitization practises and their potential for reuse and recycling in developing nations like India, there has been relatively little usage of eco-sanitation and very little understanding of it. So meeting the sanitation SDG also opens the door of “sanitation as service” and “waste into wealth” as a key pillar in the vision of a sanitation based economy creating job opportunities, and entrepreneurial development operated through right service delivery models, policies, funding, and regulatory and institutional frameworks tailored through local reality.

Establishing and promoting ecosan toilets in our educational institutions (mostly rural) need a revolution in our thinking and acting processes, focusing mostly on a private-public partnership in order to achieve the ambitious SDG goals. This will definitely result in a leap in the socially important development of children’s lives, health, and overall cognitive development by ending open defecation. Attempts will be made to minimize people’s traditional mind-set and deep beliefs of revolting against faeces. Therefore, in order to advance in the goals established by organizations that make decisions at the global level, like the WHO, scientists and workers must continue to concentrate on the engagement of rural communities or the rural community level decision makers.

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ROLE CONFLICT OF SENIOR SECONDARY SCHOOL TEACHERS OF SIKKIM

Dr. Madhab Ghosh

Assistant Professor, Department of Education, Rammohan College, Kolkata – 700 009

ABSTRACT

A role or social role is a different set of societal responsibilities and expectations of behaviour based on situations which one encounters (O'Connor & Mac Donald, 2002). People fulfill numerous roles in their lives, which create conflict for them. These conflicts originate out from their role in family, religion, or personal beliefs. Role conflict can affect the teacher adversely and it often create a role conflict in them. (Millslagle & Morley, 2004). The pressure that full-time teachers/coaches face has frequently been researched in order to identify the underlying causes of stress between the two roles of teachers and coach (Ryan, 2008). The present investigator tried to examine the status of role conflict of teachers and to compare the status of role conflict of the male and female, experienced and inexperienced, trained and untrained teachers at the senior secondary schools in Sikkim. 103 teachers were randomly selected from Sikkim for the study. Role Conflict Test (RCT) developed by Prasad and Bhushan (1991) was used in the study. The present study showed that the status of role conflict of teachers was not equally distributed. No significant difference exists between male and female teachers, experienced and inexperienced teachers' status of role conflict. And it was also revealed that there exists significant difference between role conflict of trained and untrained teachers in senior secondary schools.

Keywords : Role Conflict, Senior Secondary Schools, Teachers.

INTRODUCTION

The primacy of the role of teachers in the educational process, their active participation at all levels of management, special measures for the teachers from the disadvantaged sections like women, SCs /STs, etc., provision of facilities similar to other government employees and fair and transparent working conditions and justice to them will be the guiding principles of any such POA. Efforts will also be made to ensure that the benefits of the existing schemes for women and other weaker sections are passed on to the teachers from these groups to the maximum extent possible (Ryan, 2008). Norms for accountability of teachers will be laid down with incentives for good performance and disincentives for non-performance. The NCERT will complete this task with respect to school education within one year. Assessment of teachers will be made on the basis of

their comprehensive performance appraisal and their continuous education and improvement. Responsible teachers' associations are necessary for the protection of the dignity and rights of teachers and also for ensuring proper professional conduct of teachers. Code of professional ethics should be evolved and adopted by all concerned within a year (Austell, 2010). A Role is a different set of responsibilities and exceptions of behaviour based on situation on encounters (Grace, 2012). O'Connor & Mac Donald (2002) mentioned that people fulfill numerous roles in their lives and many a time face conflicting demands. These conflicts arise from many aspects of personal lives and these role conflicts can be found often in teaching profession. Teaching is one potential cause of many role conflicts in a person's life. It can include multiple expectations or responsibilities for a role that may create stress or conflicts. But it is not always the other's expectations which cause role conflicts; rather self-expectations also result in role strain particularly when they are not in consistence with his performance. There are instances when one performs certain roles which he does not consider as desirable or proper. More the discrepancy between his role performance and self-role expectation, greater is the magnitude of role conflict. But the self-expectations are the results of internalization of social norms, values and attitudes. In short, one suffers from role conflict to the extent he perceives inconsistency in playing his various roles (Decker, 1986).

Role conflict is the term which has generally been used by sociologists and social psychologists to denote the problem situations which arise due to simultaneous occupancy of two positions by an actor. These situations may arise from a variety of circumstances and the contexts in which the role is performed. The terms, such as role strain or role stress are all concerned with problems for the individual which arise as result of role incompatibilities (Teasley, n.d.).

LITERATURE REVIEW

Various scholars in their study have discussed the issues of role conflict. Crane & Iwanicki (1986) revealed the positive relationship of role conflict and role ambiguity of teacher burnout among urban special education teachers (N = 443) after controlling for select personal and professional background variables in Connecticut, U.S.A. The study also examined the relationship between these background variables and teacher burnout. Results showed that role conflict and ambiguity explained a significant amount of variance in feelings of emotional exhaustion and depersonalization. The perceived burnout rate among the teachers was moderate, the level varied significantly with respect to age, experience, sex, and whether one taught in a resource room or a self-contained classroom. Millslagle and Morley (2004) in their study found that the role conflict negatively affected teachers in either of their roles. To relieve this conflict, some teachers may prioritize one role over others. Britta, K., Morris-Rothschild, and Marla, R.B. (2006) revealed that the school variances were small compared with teacher variances. CMEFF and years teaching had positive, significant effects on use of integrating and compromising

strategies, while avoidance had negative effects on the both and anxiety on integrating strategies. Ryan (2008) found that age would have a negative correlation with role conflict, younger teachers are experiencing more role conflict than their older counterparts. He also found that the teachers' larger schools were perceived to have less role conflict than those at smaller schools. Oboegbulem and Alfa (2013) revealed that the unnecessary interference with the administration of the school by the proprietors and arbitrary increase of school fees by the school management, among others, constitute major sources of conflict. Findings on strategies for resolving conflicts include: agreeing on the procedure taken for the resolution of conflicts, encouraging parties to work together, taking staff and students' comments and suggestions, and involvement of school disciplinary committee and public complaint commission, among others.

RATIONALE OF THE STUDY

Teaching is a challenging job, with many teachers often being required to teach five to six classes a day, preparing lesson plans and completing various assignments and duties in addition to their actual classroom responsibilities. While a lot has been said in the praise and regarding the position and responsibilities of a teacher, study of his problems and strains has suffered neglect. A modern teacher of our society cannot be expected to fit into the image of a prehistoric 'Guru' who lived the life of a sage in some forest. A teacher, being a member of the modern society, has to play diverse and dynamic roles to meet his various needs, obligations and expectations. In doing so, he often suffers from role strain or role-conflict particularly when he has to perform certain roles to meet his conflicting or incompatible expectations. Studies have shown that role conflict is associated with increased tension, reduced job satisfaction, and psychological withdrawal. The special position that a teacher occupies in the entire system of education, therefore, demands the study and solution of his role conflicts. However, the literature on teacher's role conflict is neither sufficient nor satisfactory. One important reason for this is dearth of satisfactory objective measure of teacher's role conflict and the present research is an effort to bridge the gap. Therefore, the problem was stated as "Role conflict of senior secondary school teachers of Sikkim."

OBJECTIVES OF THE STUDY

1. To study the status of role conflict of senior secondary school teachers.
2. To compare the status of role conflict of the male & female teachers, experienced & inexperienced teachers, and trained & untrained teachers in senior secondary school.

HYPOTHESES OF THE STUDY

H₀1 : There is no significant difference in role conflict of senior secondary school teachers in relation to gender (male & female) variation.

H₀2 : There is no significant difference in role conflict of senior secondary school teachers in relation to teaching experience (experienced & inexperienced) variation.

H₀3 : There is no significant difference in role conflict of senior secondary school teachers in relation to training status (trained & untrained) variation.

OPERATIONAL DEFINITIONS

Role conflict here refers to conflict among the roles corresponding to two or more statuses. We experience role conflict when we find ourselves pulled in various directions as we try to respond to the many statuses we hold. Role conflict can be something that can be for either a short period of time, or a long period of time, and it can also be connected to situational experiences (Prasad and Bhushan, 1991). Senior Secondary School teachers refer teachers teaching in senior secondary school level ranking from classes XI to XII. Experienced teachers refer those teachers have more than 5 years teaching experience and Inexperienced teachers refer those teachers have less than 5 years teaching experience. Trained teachers refer teachers with B.Ed. course and untrained teachers refer teachers without B.Ed. course.

DELIMITATION OF THE STUDY

The study was delimited to six senior secondary schools from East Sikkim. The samples were consisting of 100 teachers. The study is confined to find out role conflict of teachers of Sikkim in relation to gender, experience, and training status variations.

METHODOLOGY OF THE STUDY

Descriptive survey method was employed for the study. It is an ex-post facto type as the current status of phenomenon what exist at the present has been considered.

The population of the study includes all teachers of all the senior secondary schools of East Sikkim. 6 schools were selected randomly for the present study. From these schools 103 teachers were selected which 53 male and 50 female teachers.

The Role Conflict Test (RCT) (Prasad and Bhushan, 1991) was used for the present study. This tool contains 22 items on five point Likert Scale. The responses categories were provided namely Very Often, Often, Cannot say, Seldom and Never. The scores will be awarded 4,3,2,1 and 0. All are positive items; the reliability of the test was 0.55 and validity of the test was 0.56. In present study, reliability of the score was computed by using Cronbach's Alpha and was found to be 0.860 for RCT. This indicated that the data was highly reliable.

Quantitative data analysis procedure was followed for this study. The collected data were analyzed through SPSS and the significance of 't' values were tested at 0.05 level of significance. The statistical techniques such as mean, SD, Percentile, and t-test were used in this study.

RESULTS AND DISCUSSION

Testing Objective 1

To achieve this objective, data was analyzed, descriptive statistics and percentiles were calculated to identify and categorize the role conflict of teachers. The descriptive statistics of the scores on RCT is presented in the table 1.

Table 1 : Descriptive Statistics of the scores on Role Conflict of teachers

	N	Mean	Median	Std. Deviation	Skewness	Kurtosis
Role Conflict	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
	103	44.7	43.9	5.8	0.41	0.22

The status of role conflict of senior secondary school teachers

For study the status of role conflict of teachers was calculated percentiles and according to that total no of sample and percentage of sample has been divided into three groups in table 2 and graphically presented in a figure (i).

Table 2 : Teacher's status of Role Conflict in Senior Secondary School

Percentiles	Raw Scores	No of Sample	% of Samples	Status of Role Conflict
P ₇₅ & Above	51 & Above	29	28	High
P ₂₅ to P ₇₅	39 to 50	44	43	Average
P ₂₅ & Below	38 & Below	30	29	Low
Total		103	100	

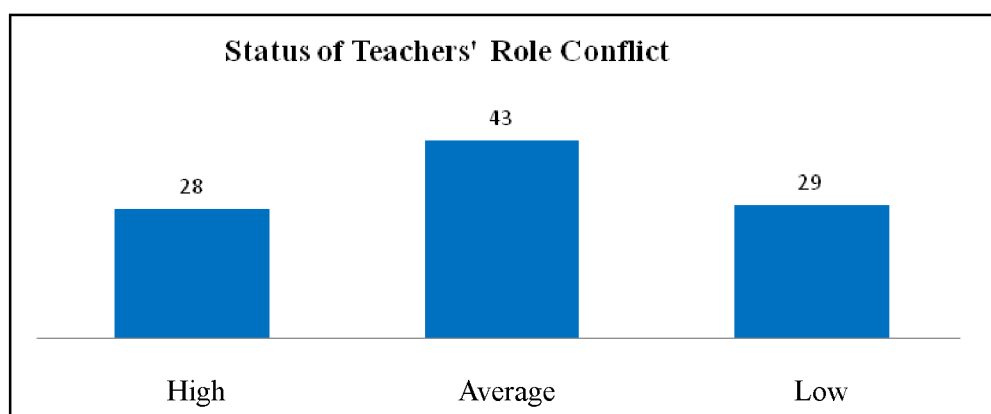


Figure (i) : Bar Graph showing Teachers' Status of Role Conflict

On the above table 2 and figure (i) shows that the 28% (29), 43% (44), and 29% (30) teachers' status of role conflict is high, average and low in senior secondary schools. The role conflict of teachers' percentages values are 28%, 43% and 29% as against 16%, 68% and 16% respectively. Hence, it can be said that the teachers' role conflict differential status were not normally distributed.

Testing Objective 2

To fulfill this objective, the following null hypotheses H_01 , H_02 , and H_03 were formulated and tested.

Testing H_01 , H_02 and H_03

Table 3 : Group Statistics of Role Conflict of Teachers - Gender, Experience & Training status

	Variations		N	Mean	SD	Std. Error Mean
ROLE CONFLICT OF TEACHERS	Gender	Male	53	44.6	6.05	1.08
		Female	50	45.7	5.6	0.80
	Experience	Experienced	25	45.64	6.1	0.98
		Inexperienced	78	44.3	5.75	0.87
	Training status	Trained	64	43.4	5.35	0.79
	Untrained	39	46.1	6.1	0.99	

From the table 3, it can be observed that variation wise there was some differences in the mean scores and standard deviation of each of the different variation. Therefore, the independent sample test was adopted to find out the 't' test for equality of means. The result was presented in below tables hypotheses wise.

Table 4 : Independent Samples Test of Role Conflict of Teachers (Malevs Female)

ROLE CONFLICT	t-test for Equality of Means			Not Significant
	t	df	Sig. (2-tailed)	
	0.95*	101	1.16	

*Not Significant at 0.05 level of significance

The analysis in table 4 shows that in case of comparing the role conflict between male ($M = 44.6$) and female ($M = 45.7$) teachers, the 't' value is 0.95 and the 'p' value is 1.16 ($p > 0.05$). Hence, H_01 is not rejected and it can be said that the groups are not significantly different from each other. Table 3 shows that the mean value of role conflict of female teacher (45.7) is higher than the role conflict of male teachers (44.6) in senior secondary schools. This finding was in

conformity with the findings of Crane & Iwanicki (1986) and Oboegbulem and Alfa (2013) who had shown that gender did not play significant role in role conflict of school teachers.

Table 5 : Independent Samples Test of Role Conflict of Teachers Experienced vs. Inexperienced

ROLE CONFLICT	t-test for Equality of Means			Not Significant
	t	df	Sig. (2-tailed)	
	0.83*	101	1.45	

*Not Significant at 0.05 level of significance

The analysis in table 5 shows that in case of comparing the role conflict between experienced ($M = 45.64$) and inexperienced ($M = 44.43$) teachers of senior secondary schools, the 't' value is 0.83 and the 'p' value is 1.45 ($p > 0.05$). Hence, H_02 is not rejected and it can be said that the groups are not significantly different from each other. Table 3 exhibits that the mean value of role conflict of experienced teacher (45.64) is higher than the role conflict of inexperienced teachers (44.43) in senior secondary schools. This finding was in conformity with the findings of Millslagle & Morley (2004), and Ryan (2008) who said that teaching experience did not play significant role in role conflict of teachers.

Table 6 : Independent Samples Test of Role Conflict of Teachers Trained vs. Untrained

ROLE CONFLICT	t-test for Equality of Means			Significant
	t	df	Sig. (2-tailed)	
	2.27*	101	0.041	

*Not Significant at 0.05 level of significance

The analysis in table 6 shows that in case of comparing of role conflict between trained ($M = 43.4$) and untrained ($M = 46.1$) teachers of senior secondary schools, the 't' value is 2.27 and the 'p' value is 0.041 ($p < 0.05$). Hence, H_03 is rejected and it can be said that the groups are significantly different from each other. Table 3 shows that the mean value of role conflict of untrained teachers (46.1) is higher than the role conflict of trained teachers (43.4) in senior secondary schools. The study was conformity with earlier studies given by Oboegbulem and Alfa (2013), which had shown that educational qualifications and training played significant role in role conflict of teachers.

MAJOR FINDINGS

- The status of role conflict of senior secondary school teachers was not normally distributed.
- Gender variation did not play significant role on role conflict of senior secondary school teachers.

- Teaching experience variation did not play significant role on role conflict of senior secondary school teachers.
- Training status variation influenced the role conflict of senior secondary school teachers.

CONCLUSION

There are several dimensions taken together in varying levels of degree that embody the effective teacher. Since, teacher range from pre-school through post senior secondary level and are unique people, no two teachers will have the same combination nor will all of them be present in excellent teacher. A teacher occupies an important and unique place in the system of education. He is the heart and soul of this system and leads the students from the darkness of ignorance to the light of knowledge and understanding. He acts as a pivot for the transmission of intellectual traditions and help to keep the lamp of civilization burning. Thus, the importance of a teacher for the community and educational system is very much evident. The present selection procedure for recruitment of teachers for college is done mostly on the basis of post academic record. It does not consider the candidate's traits and aspects which can make him component in the field of teaching. These result in selection of teachers probably in most of the cases misfit for the profession. Such professional misfit of the teaching profession further accelerates the deterioration of the system as whole. As much depends upon the efficiency of the teachers, the progress of the nation hampers due to ill equipped teachers. Hence, it becomes a prime fraction to attract more and more qualified and intelligent teachers towards teaching profession so that we can make this profession more attractive by providing different facilities and our citizen will be interested to serve as a teacher with a greater degree of favorable attitude towards teaching profession. We will try to reduce the role conflict among the teachers. In this context some of the recommendations have been made -

- i) For the purpose of defining educational policy and its objectives a close cooperation between competent, authorities, organization of teachers, employers and workers and of parents as well as cultured organization and institution of learning and research.
- ii) Authorities should establish and regularly use recognized means of consultation with teacher's organizations on educational policy and organization, upon new developments in the education service and upon the effects of administrative requirements on the work of teachers.
- iii) Teacher's organizations should be entitled to participate in making policy and in developing standards related to teaching and to enter into the profession.
- iv) Better promotional venues and incentives may be provided at all levels to all the teachers without any prejudices.

- v) In service training and counseling programme should be given to the teachers from time to time. Various seminars, symposium and meetings must be conducted for the benefits of the teachers.
- vi) Teachers need proper rest room and other physical facilities, up to date teaching equipment and instructional materials in the schools in which they serve.
- vii) They should be provided with recruitment benefits like death cum retirement of gratuity persons or of gratuity depending on the length of service.
- viii) Salary of the school teachers need to be increased keeping in view the rise in price index.

SUGGESTIONS FOR FURTHER RESEARCH

There is always scope for further research in the same area. The present study was conducted on probability sampling of 103 teachers from six Senior Secondary Schools. Further study can be conducted on the following problems :

- Study can be replicated on a larger sample by including more Districts so as present a clear picture of the Role Conflict of teachers in Sikkim.
- Similar studies can be conducted on Elementary school, Secondary School, College, and Universities.

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RESEARCH TRENDS IN OPEN AND DISTANCE EDUCATION: A REVIEW

Prof. Bishnupada Nanda

Professor and Former HOD, Dept. of Education, Jadavpur University, Kolkata.

ABSTRACT

Reported is the review study of research trends in open and distance education. After the discovery of Information and Communication Technology (ICT) and its use in education, the people are looking forward for further new scope of higher education in a cost effective way with limited access. Open and distance learning (ODL) system therefore started in different countries and in different names. This new field of education demands regular in-depth research work. First trend study on ODL started in America in 2001 by Berge and Mrozowski considering 890 research articles since than Lee et. al. (2004), Zawacki-Richter (2009), Zawacki-Richter et. al. (2009), Bozkurt et. al. (2015), Berge and Mrozowski (2001) and others since then studied research trend in ODL. In India first systematic study on Open and Distance Education (ODE) was done by Koul (1997). The present paper is a trend study on the basis of previous research works. Further in-depth study is prescribed.

Keywords: Research trends, ODL, ODE

INTRODUCTION

According to UNESCO (2002), the terms ‘open learning’ and ‘distance education’ represent approaches that focus on opening access to education and training provision freeing learners from the constraints of time and place and offering flexible learning opportunities to individual and groups of learners. Open and distance learning is one of the most rapidly growing field of education, and its potential impact on all education delivery systems has been greatly accentuated through the development of internet-based information technologies, and in particular the World Wide Web.

According to Wikipedia distance education or distance learning is the education of students who are not physically present at a school (Bozkurt et. al., 2015).

The rapid development of information and communication technologies and the move towards more knowledge intensive, interdependent and internationalized societies create new challenges and opportunities for the design and delivery of education (UNESCO, 2002, p.8). ICT opens up new horizons for progress and the exchange of creativity and intercultural dialogue. The result is

that the disadvantaged group, rural communities, illiterate populations and even entire countries are looking forward for further new scope of higher education with the application of ICTs. The people are looking forward for increased access and flexibility in education so that works and education can walk parallay. They are waiting for more and more learner centric, enriched high quality and cost effective facilities in education. Employers also demands a new horizon in education through which employees' quality and skill development can be possible in a cost effective way and their productivity can be increased without hampering their regular production. The governments also were in search of that system of training which will increase the capacity of the target group within a low cost and with limited access. The answers of all these queries are open and distance learning.

Therefore, the open and distance learning system occurs in different context and in different countries in different names viz. open education, distance education, correspondence education, external study, off campus study etc. Its importance increased throughout the world and particularly in the third world countries including India because of its cost-effectiveness high productivity, utility, greater flexibility and innovative approach.

RESEARCH STUDIES IN OPEN AND DISTANCE EDUCATION

For development of open and distance education regular research work is essential. As this field of study is still evolving and orienting itself to fulfill the demands of nations, a regular and in-depth research is essential. For the last two decades, its study emerges as a separate field of research. But since late 70s, the study in this field got momentum in India in the name of 'Educational Technology', 'Teacher Education', 'Non-formal education' and higher education etc.

First trend study in distance education published in 2001 by Berge and Mrozowski. They studied published research work and article for a period of 10 years since 1990 to 1999 mainly in America. A total 890 research articles were studied by them which they categorized into 10 research issues on the basis of Sherry's (1996) study. The issues were,

1. Redefining the roles of key participants,
2. Technology selection and adoption,
3. Design issues,
4. Strategies to increase interactivity and active learning,
5. Learners characteristics,
6. Learners support,
7. Operational issues,
8. Policy and management issues,

9. Equity and accessibility,
10. Cost / benefit trade-offs.

They also noticed that the main areas of research in this field were pedagogical issues. Most of the researchers used survey method in their study.

Another literature review was done by three Researchers - Lee, Driscoll and Nelson (2004). They reviewed 383 research articles from 4 different research journals, published from America. Lee et. al. (2004) classified research into 6 themes-

1. design related
2. development related
3. management related
4. evaluation related
5. institutional and operational related
6. theory and research related

Lee et. al. (2004) have written papers which were published between 1997 to 2002. They used thematic analysis method in their survey study.

Zawacki-Richter (2009) explores the distance education research domain by using Delphi technique. Zawacki-Richter Backer and Vogt (2009) studied 695 research articles on distance education published in 5 important distance education journals. The papers reviewed in this study were published between 2000 to 2008. Zawacki-Richter (2009) identified 15 research areas which were categorized under 3 broad categories—

1. Distance education systems and theories,
2. Management organisation and teaching,
3. Teaching and learning in distance education.

In the Delphi technique, they collected data from editorial board experts (of major DE journals from September to December, 2008) having an average of 27 years of professional experience in distance education study. The data were collected from experts from Australia, Brazil, Canada, China, Fiji, Germany, Ireland, New Zealand, South Africa, USA and UK.

Therefore, in the study of Zawacki-Richter (2009), sample were taken from English speaking countries and so show the result of this study may not be accepted in the people of non-English speaking countries. From their study through Delphi technique Zawacki-Richter (2009) concluded that “... the priority of DE research areas have not changed drastically,...”. In the present era clients of DE study are not only thinking about research on technology innovations only, rather about management and change in DE institutions. Delphi experts viewed that in the present Era DE

research needs to focus in the areas of innovations and change in teaching and learning, quality assurance, faculty support, professional development, applications of mobile devices and synchronous tools for teaching, learning and assessment. Zawacki-Richter et. al. (2009), also noticed that most of the research in DE is by employing qualitative method and 44.2% study were done by single author between the period 2000 and 2008. Mishra observed that between 1991 to 1996 61.5% studies in DE were done by single author.

Bozkurt et. al. (February 2015) studied “Trends in Distance Education Research: A Content Analysis of journals 2009-2013” by using the classification system developed by Zawacki-Richter (2009), for distance education research areas. Bozkurt et. al. (2015) reviewed seven DE and educational technology journals published in the period of 2009 to 2013. They surveyed 1225 papers published in those seven journals in the time period 2009 to 2013. Out of 1225 articles, 861 were identified as research articles and 364 as others (viz. editorials, book reviews, interviews, concept papers, reflection papers, field notes, technical notes etc.). Only the research articles (N= 861) were considered for their study. Bozkurt et. al. (2015) for their study used content analysis (defined as a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson, 1952) and analyzing written verbal or visual communication messages which includes both qualitative and quantitative approaches (Elo & Kyngas, 2008) to study empirical documentation. Following contents analysis method, they used descriptive analysis for reporting the findings and a social network analysis for analysing the “keywords used in the selected articles to achieve a deeper comprehension and distinguish the links between them” (Bozkurt, et. al., 2015, p, 4.). Findings of their study were as follows:

- 1) ‘Keywords indicated in the articles provide a holistic reflection of the research paper topics’ out of 4088 keywords 633 were field specific and 3455 where research related.
- 2) Keywords were ranked according to their frequency of appearance in the articles.
- 3) The study reveals that more researches are needed by the method of quantitative correlation and experimental methods.

Berge and Mrozowski (2001) studied the papers on DE published between 1990 to 1999. They found that most of the studies were done by using quantitative method (viz. descriptive, correlational experimental and less number of study were done by qualitative method. Now a days quantitative, qualitative and mixed studies (exploratory) were necessary in DE research. As an interdisciplinary field researches may use a variety of research methods. Mixed research design might help scientific development of the field.

DE research can be targeted on any age group or occupation based samples. It has its roots in lifelong learning philosophy. It covers formal, non-formal and informal learning.

In India distance education is effective and need based component of education. Research on Open and Distance education was seen since fifth survey of research in Education (1988-92) through the DE research gained momentum in the late seventies. Kaul (1997) classified DE research articles into seven broad areas viz.

1. Enrolment trends and courses,
2. Growth, development and social relevance of the DE system,
3. Needs and characteristics of distance learners,
4. Development and production of course materials,
5. Instructional strategies and methodology,
6. Economics of distance education,
7. Evaluative studies.

In India about 66 research studies were done in the areas of distance education (in the period from 1971 to 1992). Kaulin in his trend study observed that in the previous four surveys open and distance education researches were not reported under the umbrella of “Open and Distance education it was also found that in the earlier surveys, open and distance education research were reported under Educational Technology, Teacher Education, Non-formal Education, Higher Education etc. Open and Distance education in all the developed and developing countries are now essential and has no other alternatives.

In International scenario first trend study in DE were held considering the articles and papers published in the period of 1990-1999. In India, the first trend study was done by Kaul, considering the articles and papers published in 1971 to 1992. An America in first trend study, 890 research articles were considered but in India Kaul considered only 66 research studies. Like international scenario in India also most of the researchers adopted descriptive survey approach and quantitative analysis techniques. The other methods of research hardly find any place in the conduct of studies in DE. In India “impact and intervention studies for programme development and evaluation of distance education system are virtually non-existent (Kaul). Kaul also noticed that distance mode of education is more cost-effective and the same was established in his trend study. Student Support Services are virtually not existed in India. Faculty development/improvement programmes do not exist.

At last, it can be concluded in the words of Kaul (1997, p. 535) “Research in distance and open education in India is still in its infancy. Researchers select problems and topics which they feel are useful and conduct research on them without considering their utility in meaningful development of the distance/open education system. Hence, the research in this emerging area could not relate

itself effectively to the formulation of the theory and practices of distance education. It is, therefore, worthwhile to pinpoint certain priority areas for undertaking research in distance education....”

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IMPACT OF SOCIO-ECONOMIC STATUS AND GENDER ON STUDY HABITS OF SECONDARY STUDENTS IN SAGAR ISLAND, WEST BENGAL

Sandip Das

M.Ed. Student, Ramakrishna Mission Sikshanamandira, Belur Math, Howrah

Swami Vidyamritananda

Principal, Ramakrishna Mission Sikshanamandira, Belur Math, Howrah

ABSTRACT

Study habits play a vital role in deciding the academic outcomes of students. In this study, the investigators aimed to examine the impact of socio-economic status (SES) and gender on study habits of secondary students in Sagar Island, West Bengal. For this study, the investigators have employed a survey method to collect data. The study sample consisted of 177 students studying in class IX who were selected randomly from Sagar Island in South 24 Parganas district of West Bengal. The data was collected using the Study Habit Inventory and socio-economic status scale, and then it was analysed using the Mean (M), Standard Deviation (SD), t-test, and ANOVA. The findings of the study reveal that there is no significant difference in the study habits of girls and boys. The present study also reveals that no significant difference in the study habits of IXth standard students between the lower-middle class and middle class, but a significant difference is noticed in the study habits of IXth standard students between the lower-middle class and upper-middle class, as well as between the middle class and upper-middle class. Further, the significant difference is mostly found in the study habits of girls belonging to the upper-middle class and boys belonging to the upper-middle class compared with those of boys belonging to the lower-middle class.

Keywords : Study Habits, Socio-Economic Status, Gender, Secondary Students

INTRODUCTION

Education is very crucial to a student's overall development. He or she becomes a more holistic learner as he or she acquires new knowledge and facts. One of the goals of education is to teach children how to solve issues, grow independently, and apply what they learn in the classroom to real-life situations. Grades are thought to be the major sign of such learning. When a student receives a high grade, it is considered that they have learned a lot, and when they receive a low

mark, it is assumed that they have learned less. Many studies, however, have revealed that there are various elements that contribute to good or poor grades. It is related to a variety of factors, including socio-economic status (SES), parental educational background, gender, intellect, and study habits. In reality, practically every environmental and human aspect that exists is responsible for educational excellence. Apart from low intelligence, many students perform poorly for other reasons. One such factor is poor study habits, which often lead to poor academic performance even among bright students. Studying hard is not enough; the student should learn how to study efficiently. Students often achieve low grades due to negative attitudes, poor planning, note dependence, and improper revision methods. A well-organized and systematic study habit can bring the student sure and quick success in their studies. According to Crow and Crow (1992), effective study habits include having a plan/place, a set time frame, and taking concise, well-organized notes. Study habits encompass all aspects of the study method, such as taking notes, allocating study time for sessions and homework, and preparing adequately for exams, among others. Every student is unique with different abilities, interests, thinking, and reactions, so these characteristics have a significant impact on study habits. Although several factors influence students' study habits, the investigators chose socio-economic status and gender as independent categorical variables for the current investigation. Gender is the range of physical, biological, mental, and behavioural characteristics that distinguish between feminine and masculine (female and male) populations. In view of the belief that students' gender may influence their study habits, this study focuses on exploring the relationship between them, if any. The term "socio-economic status," or SES, is a combination of social and economic status of an individual or family based on income, occupation, wealth, etc. in a society. Broadly, socio-economic status refers to sociocultural aspects, economics, education, and the possession of goods and services that are available in a household (Islam & Khan, 2017). In higher socio-economic families, education is generally stressed as being more important both within the family and in the local community. For low-income families food, shelter, and safety are priorities and education often takes a back seat and becomes less of a priority. The present study focuses on the study habits of students with regard to their socio-economic status.

EMERGENCE OF THE PROBLEM

The largest estuary island in the Sundarbans, Sagar Island, has been chosen as the study area. Because of its location within a tidal stream and low height, the island is especially sensitive to severe threats such as cyclonic storms and tidal upsurges. Agriculture is the main source of income in this region of West Bengal. Along with agriculture, fishing and forest products are also important to the inhabitants. The majority of the inhabitants work as farmers, labourers, or cultivators (Saha & Ghosh, 2015). Students' study habits are greatly impacted by their parents' or

family members' socio-economic status. Although these interactions are reciprocal, socio-economic status is a substantial factor in determining students' study habits. Sagar has a literacy rate that is significantly higher than the national average. Literacy rates on the island are over 90%. Despite the fact that just 5% of individuals who apply for high school drop-out, barely 40% of those complete their graduation. 70% of women are literate. From the IXth grade onward, family pressurize the girls for getting married. As a result, girls are less likely to pursue further education and enter the workforce (*Project Concept for Enhancing Livelihoods in Sagar Island, Sundarbans*, 2008). According to the social role perspective, girls have less authority and status, and they control fewer resources than men. Given the assumption that gender is one of the important factors that might influence students' study habits.

RELATED LITERATURE REVIEW

According to Razia (2015), study habits and socio-economic status have a positive and strong relationship, although there was no evidence of a gender-specific interaction effect on study habits. While Vyas and Choudhary (2016) opined that there is no significant difference between the study habits of male and female adolescent students and no significant difference is observed in the study habit scores of adolescents having different socio-economic status, Ahmad and Razia (2015) further observed that a significant difference can be found in the study habits of Muslim adolescents in relation to gender and that a significant positive relationship exists between study habits and socio-economic status. According to Singh and Singh (2014), parents' socio-economic status has no significant effect on their children's academic achievement. Additionally, Ghosh and Sarkar (2018) came to the conclusion that there is no statistically significant association between study habits and socio-economic position. Instead, they found that there is a very low and positive relationship between these two factors. Khan (2016) claimed that the individuals' study habits were significantly influenced by their gender. It was discovered that socio-economic status had no impact on study habits. In contrast to the findings of Haider and Verma (2014), there was no significant difference in study habits between boys and girls. Darji (2019) discovered that students' study habits are unaffected by their school's location or socioeconomic status, and that adolescent girls outperform adolescent boys in terms of study habits. Unwalla (2020) also determined that there is a considerable difference in study the habits between males and females and that females appear to have greater study habits than males. Yap (2019) has discovered a substantial disparity in time management between sexes and ages. Charles-Ogan (2015) discovered that female students had superior study habits than their male counterparts, while Wilson (2012) discovered that females are much more willing to study at home and invest in their education. Tahir et al. (2014) discovered that undergraduate students had significant gender differences in study habit skills, whereas Benditz et al. (2018) discovered that gender-specific differences in the use of teaching

materials revealed that female students prefer to highlight text ($p < 0.0001$), with a trend to Internet research ($p = 0.053$) and small-group teaching ($p = 0.057$). According to Nishta and Deepika (2021), students in private higher secondary schools had better study habits than students in government higher secondary schools, especially in the drilling and support aspects as well as overall study habits.

A careful examination of the literature on student study habits reveals that study habits are heavily influenced by factors such as socio-economic status and gender, while Razia (2015), Vyas and Choudhary (2016), and Ghosh and Sarkar (2018) all agreed that there is a significant relationship between study habits and socio-economic status. Wilson (2012), Tahir et al. (2014), Ahmad & Razia (2015), Charles-Ogan (2015), Khan (2016), Benditz et al. (2018), Darji (2019), Yap (2019), and Unwalla (2020) have found that study habits differ considerably by gender.

Although there have been several studies on study habits in relation to socio-economic status and gender in various regions of India and other nations, this crucial issue has been disregarded by researchers, particularly in the area of Sagar Island, West Bengal, India. As a result, the current study sought to investigate the role of socio-economic status and gender on the study habits of secondary students on Sagar Island, West Bengal.

SIGNIFICANCE OF THE STUDY

Study habits are really important. Every individual has either good or bad study habits. However, excellent habits are advantageous to the processor. The findings of this study may reveal some factors that may be responsible for students' poor study habits. The current study will improve learning methodologies and assist in the development of good study habits. This research will undoubtedly aid in reducing dropouts, waste, and stagnation in the learning process. This study may help young children develop better study habits and uncover fresh techniques for improving their academic performance. The identified areas where governments at various levels could intervene to bridge the educational attainment gap in society between students from low and high income earning backgrounds.

OBJECTIVES OF THE STUDY

The following objectives were the focus of the current study:

- O1.** To measure the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal according to their socio-economic status and gender.
- O2.** To compare the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal belonging to various socio-economic status.
- O3.** To compare the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal under gender categorical variable.

- O4.** To compare the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal under the gender and socio-economic status categorical variables taken together.

RESEARCH HYPOTHESES

The null hypotheses were considered as follows:

- H₀1 :** There is no significant difference in the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal between the lower-middle class and middle class.
- H₀2 :** There is no significant difference in the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal between the lower-middle class and upper-middle class.
- H₀3 :** There is no significant difference in the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal between the middle class and upper-middle class.
- H₀4 :** There is no significant difference in the study habits between girls and boys of IXth standard students of higher secondary schools from Sagar Island, West Bengal.
- H₀5 :** There is no significant difference among the groups of students considering the gender and socio-economic status taken together (Girls from lower-middle class, Boys from lower-middle class, Girls from middle class, Boys from middle class, Girls from upper-middle class, Boys from upper-middle class) in their study habits belonging to the IXth standard students of higher secondary schools from Sagar Island, West Bengal.

DELIMITATIONS OF THE STUDY

1. In this study, only students from class IX were selected as the sample.
2. For the current study, 177 students (both male and female) were chosen.
3. The study was restricted to the variables SES and Gender as they relate to study habits, however other correlates exist.

METHODOLOGY

This study is based on a quantitative method. The Descriptive Survey Method was used in this study.

Population and Sample

All the class IX students of Secondary and Higher secondary schools from Sagar Island of South 24 Parganas district of West Bengal constituted the population of the present study. A representative sample of 177 students studying in class IX belonging to four higher secondary schools was selected randomly from the population. The breakdown of the sample has been given in the **table 1**:

Table 1 : Sample Structure

SES Gender	Lower-middle class	Middle class	Upper-middle class	Total
Girls	48	39	15	102
Boys	35	33	07	75
Total	83	72	22	177

Variables of the Study

The investigators considered two types of variables in this investigation. These two types of variables are given below-

- **Major Variable**
 - i. Study Habits as Dependent Variable
- **Categorical Variables**
 - i. Gender (Girls and Boys)
 - ii. Socio-economic status (Lower-middle class, Middle class and Upper-middle class)

Tools Used

In the radiance of the objectives of the study, the investigators used the following tools.

- Study Habits Inventory (SHI), developed by B.V. Patel (1976), was utilized to measure the study habits among the students studying class IX.
- Socio-economic status scale, developed by SC Tiwari & Ambrish Kumar (2012) was utilized to measure the socio-economic status of the students studying class IX.

Statistical Techniques

The following statistical methods were crucial to the researchers for the purpose of the study. They were descriptive statistics like – Mean, Standard Deviation (SD) and inferential statistics like - student ‘t’ test, ANOVA. Analysis of data was done using the SPSS (20.0 version).

ANALYSIS AND INTERPRETATION

- Measurement of the study habits of IXth standard students with respect to socio-economic status (SES)

Table 2 : Distribution of study habits scores with respect to SES

Socio-economic status	N	Mean	Std. Deviation
Lower-middle class	83	163.205	13.8914
Middle class	72	167.139	14.3648
Upper-middle class	22	177.455	15.2775

It is observed from **table 2** that, there exists a minute difference in the mean scores of the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal, belonging to lower-middle class (M = 163.205), middle class (M = 167.139) and upper-middle class (M = 177.455). These mean scores have additionally been presented in Figure 1.1.

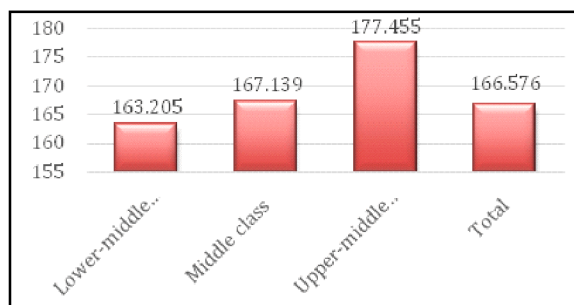


Figure 1.1 : Mean scores of study habits with respect to three categories of SES (lower-middle, middle and upper-middle class)

- Measurement of the study habits of IXth standard students with respect to gender

Table 3: Distribution of study habits score with respect to gender

Gender	N	Mean	Std. Deviation
Girls	102	166.961	13.7883
Boys	75	166.053	16.3194

Table 3. shows that, there exists no such difference in the mean scores of the study habits of IXth standard girls students (M=166.961) and IXth standard boys students (M=166.053) of higher secondary schools from Sagar Island, West Bengal. These mean scores have also been presented in Figure 1.2.

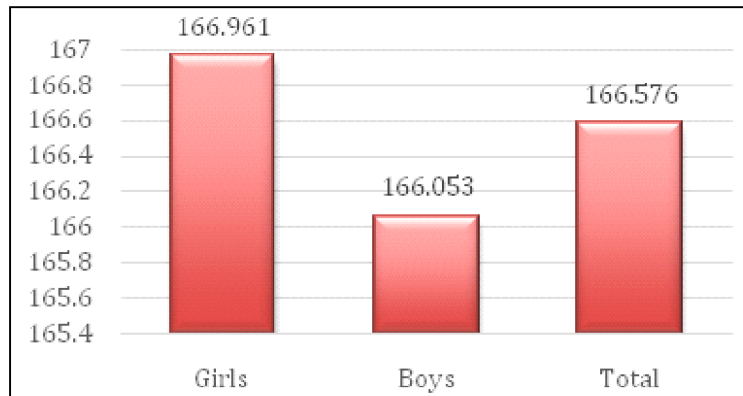


Figure 1.2 : Mean score of Study Habit with respect to gender

Table 4 : Mean Study Habits Score with Respect to Total Sample Students

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Study Habits	177	119	207	166.576	14.8755

While estimating the mean value of study habits of IXth standard sample students (N = 177) of higher secondary schools from Sagar Island, West Bengal according to their socio-economic status and gender, it has been found to be **166.576** and the standard deviation value is **14.8755** (table 4). The study habits scores of total sample students range has been found through 119 to 207. So, it can be said that, IXth standard students from Sagar Island, West Bengal possess average study habits.

- **Determination of the study habits of IXth standard students belonging to various socio-economic status (SES)**
 - **Testing of H₀1**

Table 4 : Comparison of study habits between lower-middle class and middle class students

Socio-economic status	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Lower-middle class	83	163.205	13.8914	-1.731 [#]	153	0.085
Middle class	72	167.139	14.3648			

([#]not significant at the 0.05 level)

From the analysis in **table 4**, it is seen that the calculated $t_{(153)}$ value is 1.731 and 'p' value is 0.085 ($p \hat{=} 0.05$). Hence, at the 0.05 level, 't' is not significant. So, H_01 is not rejected and it can be safely said that there is no significant difference in the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal between the lower-middle class and middle class.

- **Testing of H_02**

Table 5 : Comparison of study habits between lower-middle class and upper-middle class students

Socio-economic status	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Lower-middle class	83	163.205	13.8914	-4.189*	103	0.000
Upper-middle class	22	177.455	15.2775			

(*significant at the 0.05 level)

From the analysis of **table 5**, it is seen that the calculated $t_{(103)}$ value is 4.189 and 'p' value is 0.000 ($p \hat{=} 0.05$). Hence, 't' is significant at 0.05 level. So, H_02 is rejected and it can be said that a significant difference is found in the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal between the lower-middle class and upper-middle class.

- **Testing of H_03**

Table 6 : Comparison of Study habits between middle class and upper-middle class students

Socio-economic status	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Middle class	72	167.139	14.3648	2.905*	92	0.005
Upper-middle class	22	177.455	15.2775			

(*significant at the 0.05 level)

From the analysis in **table 6**, it is found that the calculated $t_{(92)}$ value is 2.905 and 'p' value is 0.005 ($p < 0.05$). Hence, 't' is significant at 0.05 level. So, H_03 is rejected and it can be said that a significant difference is found in the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal between the middle class and upper-middle class.

- **Determination of the study habits of IXth standard students under gender categorical variable**

- **Testing of H_04**

Table 7 : Comparison of Study habits between Girls and Boys

Gender	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Girls	102	166.961	13.7883	0.400 [#]	175	0.690
Boys	75	166.053	16.3194			

([#]not significant at the 0.05 level)

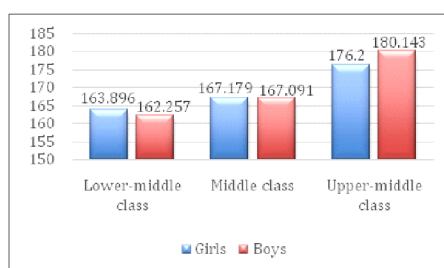
From the analysis in **table 7**, it is seen that the calculated $t_{(175)}$ value is 0.400 and 'p' value is 0.690 ($p \tilde{A} 0.05$). Hence, at the 0.05 level, 't' is not significant. So, H_0 is not rejected and it can be safely said that there is no significant difference in the study habits between girls and boys of IXth standard students of higher secondary schools from Sagar Island, West Bengal.

- **Determination of the study habits of IXth standard students among different groups**
 - **Testing of H_0**

Table 8 : Distribution of study habits scores with respect to Girls and Boys under various SES

Group	N	Mean	Std. Deviation
Girls from lower-middle class	48	163.896	12.3585
Boys from lower-middle class	35	162.257	15.8955
Girls from middle class	39	167.179	13.3078
Boys from middle class	33	167.091	15.7329
Girls from upper-middle class	15	176.200	15.9472
Boys from upper-middle class	7	180.143	14.5308

According to **table 8**, there are minor differences in the mean scores of study habits for Boys and Girls across six socio-economic status groups: Girls from lower-middle class (M = 163.896), Boys from lower-middle class (M = 162.257), Girls from middle class (M = 167.179), Boys from middle class (M = 167.091), Girls from upper-middle class (M = 176.200), and Boys from upper-middle class (M = 180.143). Figure 1.3 shows these mean scores as well.

**Figure 1.3 : Mean score of study habits in relation to gender under SES**

Whether these differences are statistically significant or not, further ANOVA was done. The result is conferred within the following table;

Table 9 : One-way ANOVA test for study habits with respect to gender and SES

Variable	Source of variance	Sum of Squares	df	Mean Square	F	Sig.
Study Habits	Between Groups	3698.327	5	739.665	3.588*	0.004
	Within Groups	35246.893	171	206.122		
	Total	38945.220	176			

(*significant at the 0.05 level)

The results of the one-way ANOVA (**table 9**) show that the calculated $F_{(176)}$ value is 3.588 and $p = 0.004$ ($p < 0.05$). Hence, 'F' is significant at 0.05 level. So, H_0 is rejected and it can be said that there is significant difference among the groups of students considering the gender and socio-economic status taken together (Girls from lower-middle class, Boys from lower-middle class, Girls from middle class, Boys from middle class, Girls from upper-middle class, Boys from upper-middle class) in their study habits belonging to the IXth standard students of higher secondary schools from Sagar Island, West Bengal.

Difference in study habits among different groups in different areas

The Post-Hoc Test was used to test the significant mean difference in the study habits of IXth Standard students in six areas (Girls from lower-middle class, Boys from lower-middle class, Girls from middle class, Boys from middle class, Girls from upper-middle class, Boys from upper-middle class) using 0.05 significance level.

Table 10 : Multiple Comparisons among groups for study habits with respect to gender and SES

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Girls from lower-middle class	Boys from lower-middle class	1.6387	1.000
	Girls from middle class	-3.2837	1.000
	Boys from middle class	-3.1951	1.000
	Girls from upper-middle class	-12.3042	0.064
	Boys from upper-middle class	-16.2470	0.086

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Boys from lower-middle class	Girls from lower-middle class	-1.6387	1.000
	Girls from middle class	-4.9223	1.000
	Boys from middle class	-4.8338	1.000
	Girls from upper-middle class	-13.9429*	0.029
	Boys from upper-middle class	-17.8857*	0.045
Girls from middle class	Girls from lower-middle class	3.2837	1.000
	Boys from lower-middle class	4.9223	1.000
	Boys from middle class	.0886	1.000
	Girls from upper-middle class	-9.0205	0.602
	Boys from upper-middle class	-12.9634	0.438
Boys from middle class	Girls from lower-middle class	3.1951	1.000
	Boys from lower-middle class	4.8338	1.000
	Girls from middle class	-.0886	1.000
	Girls from upper-middle class	-9.1091	0.647
	Boys from upper-middle class	-13.0519	0.454
Girls from upper-middle class	Girls from lower-middle class	12.3042	0.064
	Boys from lower-middle class	13.9429*	0.029
	Girls from middle class	9.0205	0.602
	Boys from middle class	9.1091	0.647
	Boys from upper-middle class	-3.9429	1.000
Boys from upper-middle class	Girls from lower-middle class	16.2470	0.086
	Boys from lower-middle class	17.8857*	0.045
	Girls from middle class	12.9634	0.438
	Boys from middle class	13.0519	0.454
	Girls from upper-middle class	3.9429	1.000

(*significant at the 0.05 level)

From the subsequent Post-Hoc analysis for multiple comparison (**table 10**), it can be observed that there is a significant difference between the study habits of girls from upper-middle class with that of boys from lower-middle class, $p = 0.029$ ($p < 0.05$). There is also a significant difference in the study habits of boys from upper-middle class with that of boys from lower-middle class, $p = 0.045$ ($p < 0.05$).

DISCUSSION

The current survey study looked at the study habits of secondary students in Sagar Island, West Bengal, and how they differed depending on their socio-economic status and gender. It should be mentioned that the findings show that class IX students' study habits are influenced by their socio-economic status. The current study investigates the existence of average study habits among all IXth standard students from higher secondary schools in Sagar Island, West Bengal, according to their socio-economic status and gender. The present study reveals that there is no significant difference in the study habits of IXth standard students of higher secondary schools from Sagar Island, West Bengal, between the lower-middle class and middle class (on testing of H_01), but a significant difference is noticed in the study habits of IXth standard students between the lower-middle class and upper-middle class, as well as between the middle class and upper-middle class (on testing of H_02 and H_03 , respectively). These findings also support the previous studies of (Razia, 2015); (Vyas & Choudhary, 2016); (Ghosh & Sarkar, 2018). The findings of the present study are not in agreement with earlier studies, conducted by (Singh & Singh, 2014); (Khan, 2016); (Darji, 2019).

Current study also explores that there is no significant difference in the study habits between girls and boys of IXth standard students of higher secondary schools from Sagar Island, West Bengal (on testing of H_04). This findings are supported by the previous studies of (Haider & Verma, 2014); (Razia, 2015) but not supported by the previous studies of (Wilson, 2012), (Tahir et al., 2014), (Ahmad & Razia, 2015), (Charles-Ogan, 2015), (Khan, 2016), (Benditz et al., 2018), (Darji, 2019), (Yap, 2019) and (Unwalla, 2020).

Present study reveals that a significant difference is noticed among the groups of students considering the gender and socio-economic status taken together (Girls from lower-middle class, Boys from lower-middle class, Girls from middle class, Boys from middle class, Girls from upper-middle class, Boys from upper-middle class) in their study habits belonging to the IXth standard students of higher secondary schools from Sagar Island, West Bengal (on testing of H_05). The current study's findings are consistent with past research done by Ahmad and Razia (2015).

In a nutshell, the following observations may be made based on the preceding results: To begin, IXth standard students from higher secondary schools in Sagar Island, West Bengal have average

study habits based on their socio-economic status and gender. Second, gender as a categorical variable had no effect on the study habits of IXth standard students from higher secondary schools in Sagar Island, West Bengal. Third, there is a little variation in the study habits of IXth standard students from higher secondary schools from Sagar Island, West Bengal, who belong to the lower-middle class, middle-class, and upper-middle class, notably between the middle and upper-middle classes and lower-middle & upper-middle classes. Fourth, while searching for and comparing the current scenario of study habits that are adapted by IXth standard students of higher secondary schools from Sagar Island, West Bengal, under different categorical variables, it was discovered that the students have a significantly different level of study habits depending on their gender and socio-economic status. The significant difference was mostly seen in the study habits of girls from the upper-middle class and boys from the upper-middle class compared to boys from the lower-middle class. It might be due to a lack of good planning, a lack of direction, illiterate or less literate guardians, a lack of books, home surroundings, the parents' economic well-being, and so on. Proper supervision from parents and teachers, as well as financial assistance, may improve study habits.

EDUCATIONAL IMPLICATIONS

The following are the educational implications of the current study:

- i. According to the study, there is no difference in the study habits of girls and boys. It may be discovered that gender differences in study habits have no effect. Perhaps both girls and boys are aware of their career possibilities.
- ii. Parents from the middle and lower-middle socio-economic classes should be more concerned about their children's education.
- iii. Students must sleep and wake up earlier, as well as plan a regular routine.
- iv. Students should devote some time to textbook reading. Spend the time rewriting the essential concepts into a notebook if they have previously read the chapters.
- v. Students should set aside some time each week to read up on the background of the ideas that surround their topics. Choose news or books that are fascinating and that include concepts from their area of study. Reading relevant background material might help ideas stick by relating them to reality.
- vi. Students shouldn't spend more than 20 to 30 minutes a day on social media. It will waste students' valuable study time.
- vii. Students should routinely arrange their daily lesson notes.

CONCLUSION

As a result, the present study offers a clear picture of how different aspects of socio-economic status, gender, and their interactions affect the study habits of students in the IXth standard of higher secondary schools in Sagar Island, West Bengal. A student must follow a correct study schedule, take notes during lectures, plan their subjects, focus on their studies, get ready for examinations, keep a positive study plan and attitude, and use technology appropriately. The development of effective study habits is crucial for their academic achievement. Presently, it appears encouraging that female students are actively engaged in their education and that their study techniques are just as effective as those of male students. In this scenario, numerous state and central government programmes and collaborations are critical to the advancement of women's education. Students' study habit are often influenced by their socio-economic background; however, this is not always the case. In certain circumstances, students from low-income families outperform their peers through hard work and solid study habits. As a result, it is the responsibility of school administrators, teachers, and parents to make children aware of healthy study habits and urge them to practice these habits regardless of gender or socio-economic background. A teacher must encourage pupils to learn via experiments, observations, and exploration. However, this must be supported by appropriate facts and explanations. Only the teacher can sustain, regulate, and lead the learning process, as well as help students improve their study habits. Developing strong study habits leads students to a better comprehension of knowledge and makes them more productive.

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CLIMATE CHANGE : ISSUES AND CHALLENGES — A VEDIC PERSPECTIVE

Dr. Santu Kumar Pan

Assistant Professor, Bejoy Narayan Mahavidyalaya, Hooghly, West Bengal.

ABSTRACT

Today's world is facing grave environmental challenges. To overcome present environmental challenges, we can learn much from our ancient Vedic culture along with modern technologies to protect our environment. Veda has listed five basic Yajans (sacrifices) to be performed practically i.e. Brahmayajna, Devayajna, Pitrayajna, Atithiyajna and Balivaishyadevayajna to upkeep the whole environment pure and safe along with providing philosophical knowledge to the human. It was the duty of each individual to perform these Yajnas in the ancient times. These Yagnas protect and enrich our environment. Vedic culture enriches our body, mind, society, atmosphere and environment. This paper will discuss the modern and the Vedic definition of Environment and how Vedic scriptures will help us to face the environmental challenges effectively besides the modern technology.

Keywords: Environment, Science, Vedic Scriptures, Yagna.

INTRODUCTION

Climate or Environment and Ecosystem:

To say in layman's words, environment means weather i.e. anything surrounds us constitutes environment. Not to define the word scientifically, environment consists of 4 spheres intersecting each other. These are: Lithosphere (soil), Hydrosphere (water), Atmosphere (air) and Biosphere (life). So when we talk about environment and its balance or imbalance, we are actually talking about the inter-relation of these four constituent elements.

Having understood what is meant by environment in its broader and scientific terms, let's study another important term called – Ecosystem. Scientifically speaking, the term means, the inter-relation between the organism (living being) and its environment (only three elements excluding biosphere). To further elaborate, organism consists of plants, animals and other micro-organisms (i.e. living beings) which environment consists of the surrounding i.e. soil, water and air. Now, these two elements of the ecosystem continuously act and react on each other thus causing some reversible and irreversible changes. Whereas, there are certain balancing forces which keep these changes within permissible limits and thus prevent any permanent damage to the organism or the

environment. This has been proved in many scientific theories and can be evidenced in the Carbon, Nitrogen, Water and other cycles observed in nature.

But due to some human actions, this balancing action of nature gets disturbed. And so-called reversible, temporary and within-permissible-limit changes are rendered irreversible, permanent and beyond-permissible-limits. These are the changes which concern us and are the topics of our discussion today. What are these changes, what are the threats posed by these changes to the human, animal, plants and all living organisms on our planet, what are the remedies suggested by the science and what is the role of Vedic knowledge in dealing with this situation – these and such questions will be dealt with in this paper.

CLIMATE CHANGES

It is seen that for last billions of years, earth's atmosphere and hydrosphere have been composed of approximately same balance of chemical components we live with today. The earth has a unique mechanism for stabilizing and controlling the global climate. These mechanisms are:

- i. The plants and animals balance carbon dioxide level of the atmosphere which acts as a global thermostat. For, CO₂ gas absorbs the outgoing heat radiation from earth and is therefore responsible for control of temperature.
- ii. Water bodies (ocean) play an important role in regulating global climate.

In recent years, the rapid growth in population, the rate at which we consume the earth's resources, extravagant life styles etc. lead to substantial increase in carbon level of atmosphere.

Some of the important factors affecting the climatic change are - Global Warming, Ozone Layer depletion and Acid Rain.

'Global Warming' refers to the gradual rise of atmospheric temperature due to human action. As per research estimates, the surface air temperature of the earth over past 100 years has increased by about 0.5 to 0.7 degree Celsius. This is due to Green House Effect. To understand this effect in a nutshell, it means, certain gases like CO₂, Methane, CFC and NO₂ have the tendency to absorb more amount of radiated heat from earth. Thus, increase of their percentage in atmosphere leads to the increase in overall temperature of the earth. Now, what are the sources of these gases? Or, why is their percentage increasing in the atmosphere? Sources of CO₂ is burning of fossil fuels, fire woods, automobile emissions, factory emissions etc. Paddies, livestock, waste dumps and coal mining are the major sources of Methane. Refrigerating agents are the major sources of CFCs and Chemical industries are the major suppliers of NO₂ to atmosphere. This coupled with the large amount of de-forestation and felling of trees which are the major carbon sink (as they absorb carbon dioxide and emit oxygen) has led to the imbalance in global thermostatic conditions.

CONSEQUENCES OF GLOBAL WARMING

1. It is estimated that if the present rate of increase of CO₂ level continues, it will result in rise of atmospheric temperature by 20°C to 30°C by the end of 21st century. This will result in melting of icecaps in polar regions and of many major glaciers at higher altitudes. According to an estimate, if all the ice of the earth would melt, about 60 meters of water would be added to the surface of all oceans and low lying coastal areas. A rise of only 50-100 cm is sufficient to flood the low lying areas of the world such as Bangladesh, West Bengal as well as densely populated cities such as San Francisco and Shanghai.
2. Incidences of cyclones and hurricanes will increase due to increased global temperature.
3. A slight increase in world temperature would adversely affect the world food production, as well as causing to extinct many more animal species from the surface of this planet.

Other two climate change phenomenon (e.g. Ozone Layer depletion and Acid Rain) can also be similarly analyzed and traced for their cause and consequences.

Development or Destruction

Alarmed by these devastating effects, scientists, politicians and thinkers of the world are compelled to pause and think about the so-called Development that has caused this grave situation. We all know that human beings, with the help of technological developments and consumption of energy recourses have made many inventions and discoveries to make their life more and more comfortable. We cannot think about life without technology and mineral and power resources today. But have we ever thought that if we continue to consume our natural resources with the same rate, most of the resources will be consumed within next 100 years or so? Not only that, but we are also polluting our atmosphere (land, water and air) so badly, that the so-called renewable resources like water are also turning non-renewable. (e.g. Yamuna water). Many such questions put question to the very concept of development and hence world leaders are now aiming not only for technological development and economic growth but for Sustainable Development and Equitable Growth. A committee was formed under the leadership of Norway Prime Minister Brundtland, known as United Nations Commission on Environment and Development (UNCED) also known as Brundtland Commission which proposed a plan to be executed by all the Developing and Developed countries of the world together so that there is a balance between Economy, ecology and technology which is must to protect our future. Suggestions of this commission include the reduction of air pollution (carbon emission) by reducing the fossil fuel burning, by technological innovations, by replacing the fossil fuels by cleaner fuels, by reducing the consumerism (which is an offshoot of materialism), by population control and by spreading awareness among people i.e.

by educating them about the imminent danger if we continue to live our lives in the same fashion as we live today.

VEDIC PERSPECTIVE

Now, having seen what are the climate issues that we face today, and what are their causes and possible remedies suggested by science, let's look at what our ancient heritage, our cultural legacy, our Vedic scriptures suggest us in dealing with this problem.

Academic institutions now offer courses, such as environmental studies, environmental management and environmental engineering, that teach the history and methods of environment protection. But many of us do not know that protection of the environment has been stressed from the Vedic Period onwards in our Sanatana Dharma (Hinduism) codes. Environmental protection is influenced by three interwoven factors: environmental legislation, ethics and education. Each of these factors plays an important role in taking national-level decisions and in molding personal-level values and behaviors.

The protection and preservation of environment is integral to the culture and religion of most human communities; nature is seen as an essential part of the society at large.

One may wonder how an ancient lifestyle can be a solution to a problem which is of a recent origin when the issues like Global Warming and Deforestation and Pollution were almost absent in ancient society. How can then we be benefitted from their cultural and philosophic outlook and gain from their life style? The answer is, we will not get direct "HOW TO DO IT" kind of answers from the Vedic Civilization to deal with the problem at hand. Nor are we suggesting going back to the Vedic age and following the lifestyle which the Vedic seers followed in ancient ages – that will be suicidal. But it is an object of common knowledge that all the problems or crisis which we face today are the result of man and nature interaction; it is the result of human response to the environment in which we live. This being so, if we can make this human response more apt, more suitable and more harmonious with the whole scheme of nature, obviously we will be succeeded in creating a better picture, a greener nature and a brighter future for us all. So study of Vedic Perspective is to gain this holistic understanding which will help us to live harmoniously with our nature and with each other.

CONCEPT OF ALL-INCLUSIVENESS

According to Hindu scriptures our personal well-being is interminably intermixed with the environmental well-being and this is because we are not a separate individual existing unconnectedly with our surrounding, but we are the part of the Whole, like a link in the spider-web

and slightest disturbance at one end of the web affects the whole web invariably. Our Vedas have from time-immemorial have proclaimed that –

अयं निजः परो वेत्ति गणना लघुचेतसाम् । उदारचरितानां तु वसुधैव कुटुम्बकम् ॥ⁱ

Meaning : This is mine or that is his - this is the thinking of the small-minded people. But for the large-hearted ones, the whole world itself is a family.

Thus, Vedas have taught all-inclusiveness from the beginning. And that our well-being is not in our personal pleasure-seeking but in seeking the well-being of ALL together, not excluding our environment. And that is why Donation दानम् has always been revered as a divine virtue. Says a famous *Subhashita*–

परोपकाराय फलन्ति वृक्षाः परोपकाराय बहन्ति नद्यः ।
परोपकाराय दुहन्ति गावः परोपकारार्थमिदं शरीरम् ॥ⁱⁱ

Meaning: Trees bloom for others' benefit, rivers flow for others' benefit, cows give milk for others' benefit; therefore, this body of ours is also for the benefit of others.

This attitude of all-inclusiveness was the prominent characteristics of the Vedic religion from the beginning. This was the very reason, there was no religious bigotry and fanaticism found in Indian religious history, which is so obviously present in all other major religious traditions.

DIVINITY OF NATURAL FORCES

Another important reason why nature came to be cared for and worshipped in Vedic tradition was because Nature and its forces were regarded as Divine. This does not necessarily mean some superstitious belief. Rather, there is a deep philosophical thought behind it, not knowing which critics often criticize *Sanatan Dharma* as superstitious and polytheistic (believers in many Gods). Let's look at the philosophic background in a brief that gives sufficient rational background to this idea of this so-called polytheism. According to *Sankhya* tradition of Cosmology, the process of creation begins with the will that sprouted in the Cosmic mind of Brahman – ‘कोऽहम् बहुस्याम्’ ‘*I am One, But I will become Many*’. And from it came out this multifarious nature or *Prakriti* having three gunas – Sattva, Rajas and Tamas. This *Prakriti* coming in contact with *Purusha*, lost the equilibrium in these gunas and through more and more changes, produced more and more objects of this world which basically consist of five elements and they are - Prithvi, Tej, Aap, Vayu and Akash. These elements in their subtle and gross form then combine together and give rise to all living and non-living beings. Thus, everything of the world, including the living beings (organism) and non-living beings (environment) are the modification of same *Prakriti* and *Purusha* and hence, they are all divine. And there is no basic difference between them. In fact the idea of OTHER does not exist in Vedic tradition. All is ONE.

भमिरापोऽनलो वायुः खं मनो बुद्धिरेव च ।
 अहंकार इतीयं मे भिन्ना प्रकृतिरष्टधा ॥ ७-४ ॥
 अपरेयमितस्त्वन्यां प्रकृतिं विद्धि मे पराम् ।
 जीवथुतां महाबाहो ययेदं धार्यते जगत् ॥ ७-५ ॥
 एतद्योनोनि भुतानि सर्वाणीत्युपधारय ।
 अहं कृत्स्नस्य जगतः प्रभवः प्रलयस्तथा ॥ ७-६ ॥
 मत्तः परतरं नान्यत्किञ्चिदस्ति धनंजय ।
 मयि सर्वमिदं प्रोतं सुप्ते मणिगणा इव ॥ ७-७ ॥ⁱⁱⁱ

Krishna says in Gita that these two Prakritis called *Para* and *Apara* are My own product (प्रकृति विद्धि मे). And therefore everything that exist (सर्वमिदं) are, as it were, strewn into Me, like the pearls are strewn into a thread (सुप्ते मणिगण इव प्रोतं). This philosophy of One consciousness origin of all world helped the Vedic seers to look upon the world as an object of Divine origin and thus worship it in true spirit. Similar passages are found in *Mundaka Upanishad* also.

एतस्माज्जायते प्राणो मनः सर्वेन्द्रियाणि च ।
 खं वायुर्ज्योतिरापः पृथिवी विश्वस्य धारिणी ॥ ३ ॥
 अग्नीर्मूर्धा चक्षुषी चन्द्रसूर्यौ दिशः श्रात्रो वाग् विवृताश्च वेदाः ।
 वायु प्राणो हृदयं विश्वमस्य पद्भ्यां पृथिवी ह्येष सर्वभूतान्तरात्मा ॥ ४ ॥^{iv}

In the **Mundaka Upanishad**, the divine is described as follows: “*Fire is His head, His eyes are the moon and the sun; the regions of space are His ears, His voice the revealed Veda, the wind is His breadth, His heart is the entire universe, the earth is His footstool, truly He is the inner soul of all.*”

Cosmic order or RITAM

As we have seen while studying the scientific approach to climate change, there is a natural balance in different components of environment. In Vedic tradition, this balance was called RITAM. And it was considered as a Divine Order that keeps different forces that are in action in the Universe in control. As acknowledged by the scientists and environmentalists, the fact that this balance gets disturbed only by man's excessive greed was also recognized by Vedic seers. They reiterated the same in consonance with Mahatma Gandhi who said, “Earth has enough for every man's need but not for his greed.” **Ishopanishad** says—“मा गृधः कस्यस्विद धनम्”

So, as understood by modern science and by common people as well, the root of all the crisis that we have landed ourselves in our attitude of excessive seeking, in our never-quenchable thirst for more and more pleasure, more and more wealth and more and more luxuries, even at the cost of our fellow-beings and of course at the cost of our mother-nature. This is known as consumerism

which is a well-bred culture in West, and the roots of which lie in Materialism. But in our Vedic tradition, life was divided in two parts – *Pravritti* and *Nivritti* i.e. *Abhyudaya* and *Nishreyasa*, the outgoing tendency of mind and incoming tendency of mind, in outward growth and in inward fulfillment. Vedic seers didn't condemn the pleasures or luxuries or outward growth as is a common misconception about them. They accepted it as a necessary stepping stone in complete development of a human being. Only they emphasized the right means to attain them. This idea is well-known as the philosophy of PURUSHARTHA – Dharma, Artha, Kama and Moksha, where *Dharma* implies Moral and Ethical code of conduct, the rightful means of attaining *Artha* (lit. meaning Money or the means of fulfilling desire) which will procure *Kama* (desire or pleasure-seeking). And only when the Artha of means are based on Dharma or ethics, can the Kama or pleasure be purifying and can lead a man to the highest or Parama-Purushartha or *Moksha*. First three belong to this world while the last one belongs to the other world. Now, in materialist philosophy, as the Kama has become a Supreme Purushartha, the means are being overlooked. Seeking of pleasure has become so important that man is willing to destroy the very means which ensure him this steady supply of pleasant things. He is hell-bent to kill the golden goose in quest of getting all the golden eggs at once. This attitude of pleasure-seeking is to be balanced and corrected with the right understanding and foresight and insight that it will ultimately lead to doom. For it will not only kill the Pleasant thing we are seeking but it will also kill the very person, the pleasure-seeker in long run” —“भोगा न भुक्ता वयमेव भुक्ता”^v.

Pleasures are not exhausted but we ourselves got exhausted. This idea of controlled enjoyment in an ethical and moral way is the teaching of Vedic Culture and which is to be imbibed by man if he has to save himself from the impending danger of extinction.

Practical suggestion

One may ask after hearing all of these discussions, whether all that Vedic tradition has to offer is of the form of philosophical outlook and has nothing practical to practice? Well, the answer is – It is not so. There are practical suggestions. In Vedic period, people used to practice 5 types of Yajnas.

पञ्च वा एता महायज्ञाः-देवयज्ञः पितृयज्ञः भूतयज्ञः मनुष्ययज्ञो ब्रह्मयज्ञ इति^{vi}

India is the home of Vedic culture, which is over 5,000 years old and the Panchamahayajna (the five great sacrifices), has been a vital part of this culture. The Panchamahayajna are Brahmajajna, Devayajna, Pitrayajna, Atithiyajna (or Bhootayajna) and Balivaishyadevayajna (or Manushyayajna).

Brahmajajna relates to daily prayer to the Almighty, study of the Vedas and other spiritual scriptures. In today's context even if you're an atheist still finding some time for meditation and

say, the breath (which does not need any more proof of existence) and reading some positive, motivational scriptures can do a lot of good to the mental environment called *mind*.

Devayajna is about performing sacrifices to devas, in ancient terms it is called *havan*. Though this might sound like purely religious and pertaining to Hinduism, the positive effect of such havans on atmosphere and society in general is ample. Agnihotra is one such Devayajna which has now come to the limelight of scientists and various studies regarding its effect on atmosphere and the vegetation around is in progress. In short, Devayajnas promised the purity of one's intellect, mind, body and most importantly the atmosphere.

Pitrayajna is nothing but giving due respect and taking adequate care of one's parents and elders of the family. This also includes proper upbringing of one's progeny. Had this culture been upheld properly, then there would have been no Old Age Homes and Orphanages in India.

Atithiyajna, as the name suggests, pertains to respecting and serving one's visitors. The Vedic list of visitors included any truthful, pious soul. All saints, sages and learned people fell under this category.

Balivaishyadevayajna requires one to be compassionate and responsible to all other fellow species. If we humans had executed this Yajna dutifully then, words like extinct species and endangered species would not have entered our lexicon.

Thus, performing these sacrificial rites in their right spirit and not merely as rituals will purify our minds and intellects and thus purify our environment which is nothing but the response that we give to it. Unless our minds are purified from the pollution of selfishness and over-acquisitiveness, we cannot be succeeded in reducing the pollution in our Environment.

CONCLUSION

In conclusion, we would like to call forth everyone to come forward in the efforts to purify our environment and make our earth a beautiful place where Gods dwell. You will be glad to know that, a poem written by an Indian Poet **Mr. Abhay** whose Earth Anthem has been recognized Internationally on June 5th, which is celebrated as the World Environment Day all over the world by United Nations, and also has been translated in 6 UN recognized languages, including Hindi and Nepali. The Anthem is thus:

*Our cosmic oasis, cosmic blue pearl
the most beautiful planet in the universe
all the continents and the oceans of the world
united we stand as flora and fauna
united we stand as species of one earth*

*black, brown, white, different colours
we are humans, the earth is our home.*

*Our cosmic oasis, cosmic blue pearl
the most beautiful planet in the universe
all the people and the nations of the world
all for one and one for all
united we unfurl the blue marble flag
black, brown, white, different colours
we are humans, the earth is our home.^{vii}*

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(End notes)

- i Hitopadeshah, Sandhi
- ii Subhashita Sangraha
- iii Bhagavad Gita - (7/3-7)
- iv Mundaka Upanishad - (2/1/3)
- v Vairagya Shatakam, Bhartrihari
- vi Taiteriya Aranyaka
- vii "Earth Anthem" by Abhay K

DROPOUTS IN ELEMENTARY LEVEL IN WEST BENGAL DURING COVID-19 PANDEMIC SITUATION

Dr. Pradip Kumar Sen Gupta

Associate Professor, Ramakrishna Mission Sikshanamandira,
Belur Math, Howrah- 711 202

Anirban Bhattacharya

Research Scholar, Ramakrishna Mission Sikshanamandira, Belur Math, Howrah- 711 202

ABSTRACT

In almost last two years all on a sudden we all are facing an unknown crisis. A disease named Covid-19 has interrupted the normal functioning of our lives and livelihood, which has been declared as a Pandemic by World Health Organization (WHO). As the outbreak intensified, livelihood of people suffered immensely. It has changed the normal rhythm of our lives and professions. Like other fields, its effects can be felt in the sphere of education too. Regular face to face interactions in classrooms have stopped ever since the lockdown started. In our state i.e. West Bengal, Government has initiated to open the doors of schools for class IX - XII & Colleges in twice. But the severe outbreak of this disease has compelled to close the institutions considering the health issues of the learners. But the physical presence of learners in Elementary Level was totally interrupted from the starting of Lockdown. Due to world-wide Pandemic in Covid-19 virus, the education of whole world somehow affected and the schooling system nearly ruined for near-about two years. Then, we did not know surely when regular classes will be resumed in Elementary Level. In this respect, drop outs are increasing in our Education System. Government has tried to introduce various online teaching platforms. They have been tried to habituate the learners with this digital learning system. Use of electronic gadget and many other modern digital devices changed the scenario of education in today's world. Government of India also introduced the idea of "Digital India" and the digitized education system created a new impact in the field of education too. In near recent times various types of digital platforms like Banglar Siksha Portal, Swayam, Swayam-prabha, E-Pathshala, Bhart Digital Class etc. has also been introduced. Various institutions are applying many online apps to conduct classes, exams or etc. Various E-Content like Moodle cloud, Unacademy Team etc. may be used for digital classroom learning. But a large number of people couldn't access this kind of system gladly due to their financial as well as societal conditions. So, communication gaps had been seen in our system. They might be marked as Digital Glitch. Due to such kind of circumstances, the Drop Outs problems had been raising. In this article,

the presenters try to analyze the reasons behind the Drop Outs of our education system. They also have tried to give some of the initiatives taken by the Government to run the education process at present. The article also concludes that this system is a time consuming matter. All the stakeholders should do the collective works. The success of this process not only depends by the Government initiative or measures but also the will power of all can make it successful in near future.

Keywords: *Drop Outs, Elementary Level, Education System, COVID-19*

INTRODUCTION

The education system of the world was affected due to the Pandemic caused by covid-19 virus. The gates of the schools got closed for approximate two years. “We see many of our own young pupil of 14, 15-year-old, leaving school and starting their earnings to help the families which is heart-breaking,”—Bemoans Sriram mentioned in the Hindusthan Times. “A lot of them are struggling because 90 per cent of their parents have lost their livelihoods. They’re in informal sectors and a lot of them are dependent on unskilled works, and working in shops and commercial establishments that were shut down suddenly.” With many schools switching to online system, video-based learning, children from marginalized communities are unable to continue accessing education from home. Many studies have reported that they either do not own the technology or cannot afford to pay for internet data. Each day millions of children do not go to school since they have to earn their livelihood and face humanitarian crises. The outbreak of COVID-19 has compounded the plight of learners in countries affected and set back them to emerging conflict and disaster. While the Global Campaign for Education (GCE) acknowledges the public health decision to close schools, we believe that contingency plans should be replaced and ensure the right to education even at the time of crisis.

Right to Education Act of India (2009) has increased students’ enrolment, but this pandemic situation compelled some of students to go out of school arena and engaged them as child-labors. With more-than 560 million internet users, India has the second largest online market in the world, ranked only behind China. It was estimated that by 2023, there would be increased over than 650 million internet users in the country. Despite the large base of internet users, the internet penetration rate in the country stood at around 50 percent in 2020. This meant that around half of the 1.37 billion Indians had access to internet that year. There has been consistent increase in internet accessibility compared to just five years ago, when the internet penetration rate was around 27 percent.

However, internet accessibility and usage of internet largely varied in the country based on factors like gender and socioeconomic divide. It was estimated that in 2020, there were more than 300 million internet users in rural India compared to 335 million urban internet users. But it is

worth mentioning that the majority of Indian internet users were between 20 and 29 years of age, and a slightly higher proportion of these users were from rural parts. At the same time, there were far more male internet users in the country compared to female users. And this digital gender gap only increased further in the rural hinterlands compared to urban metros.

A majority of India's digital population accessed the internet via their mobile phones. Merely 8.5% school students in India have internet access. The disruption in education has suffered second worst condition in South Asia due to COVID-19 pandemic situation. According to UNICEF Report 2021, India recorded 146 days of school shutdown. 60% students do not have internet access in India (A Report by Azim Premji Foundation in January-February, 2021). According to PTI report, the former RBI Governor and eminent economist Dr. Raghuram Rajan said regarding the COVID-19 pandemic situation that "India Needs to do more recovery, as well as a possible lowering of our medium-term growth potential. My greater worry about the economy is the scarring to the middle class, the small and medium sector, and our children's minds, all of which will come into play after an initial rebound due to pent up demand. One symptom of all this weak consumption growth, especially for mass consumption goods." (Monday, 24 January, 2022 through an Interview through email.)

West Bengal government is launching a new project entitled 'Paray Shikshalaya' to bridge the learning gaps of two years and to reduce the dropout rate. Classes IX to XII had been reopened twice during the pandemic but around 80 lakh students in primary sections haven't stepped into school premises, resulting in a rise in dropout rate in the section. According to the annual state of education report (ASER) 2020, the school dropout rate in Bengal declined from 3.3% to 1.5% in 2019 while it went up to 4% to 5.5% at national level.

Paray Shikshalaya is a community-based learning system for primary level students. The main objective is to provide learning support with a joyful open assembly similar to classroom experience. The project has started from February, 2020. An expert committee prepared a structured academic material for the project for children of the age group of 5-9 years.

As the outbreak of Pandemic intensified, the livelihood of people suffered immensely. It has changed the normal rhythm of our lives and professions. Like other fields, its effects can be felt in the sphere of education too. Regular face to face interactions in classrooms have stopped. Everyone cannot access the opportunities of online services. Due to such kind of circumstances, the Drop Outs problems have been arisen.

OBJECTIVES OF THE STUDY

The objectives of the following study are stated below :

- To know the status of enrolment, attendance and retention rate in elementary level.
- To know the causes of drop-outs in elementary level.

- To know the initiatives taken by the Government to remove the drop-outs in elementary level.
- To offer suggestions and recommendations on the basis of the findings of the study.

RESEARCH QUESTIONS

For the fulfilment of the above mentioned objectives, following research questions are formulated —

- What is the present status of enrollment in elementary level?
- What is the present status of attendance in elementary level?
- What is the present status of retention in elementary level?
- What are the causes of drop-outs in elementary level?
- What are the initiatives taken by the Government to remove such problems?

DELIMITATIONS OF THE STUDY

The delimitation of the study are as follows —

- This study has been delimited to the 24 Parganas (North), Purba Burdwan and Hooghly district of West Bengal only.
- This study has been delimited to the Elementary Level Schools only.
- The study has been delimited to the students of Bengali Medium Elementary Schools only.
- The study has been delimited to the government aided Elementary Schools only.

REVIEW OF RELATED LITERATURE

Roy (2011) in a study entitled “A study on the dropout problem of primary education in Uttar Dinajpur, West Bengal” emphasizes the relevance of Right to Education act (RTE) and gave more emphasis on free and compulsory education. The researcher critically analyzed the reasons of drop-outs in elementary levels and also gave a clear picture of drop-outs in the block levels of Uttar Dinajpur district. Hati & Majumder (2012) in their study entitled “Proximate Determinants of School Dropout: A study on Rural West Bengal” reveal that the School dropout has emerged as major hindrance to human capital formation in developing countries globally and efforts are on to stem this. The findings of the study revealed that gender differences of dropouts. Mother’s education, distance of school, family size and parental occupation emerge as important factors that affect school dropout. They also gave some suggestions to overcome this problem. Ali (2014) in a study entitled “A comparative study on the dropout problem in Primary Education among Muslim community in relation to gender and economic status” revealed the causes of drop outs Muslim communities in respect to their gender and economic status. Nine Gram Panchayats and two

Municipality areas of Malda district, West Bengal were selected by as the sample area and 400 hundred parents were selected as sample. The researcher revealed that poverty influences the parents to withdraw their wards from school. Sarkar (2015) in his study named “A Study to Determine the Prevalence of School Dropouts and its Association with Selected Factors among Children of 6-19 Years, residing in a Rural Community of West Bengal” emphasizes the prevalence of school dropouts, factors of school dropout and its association with selected factors. Children of 6-19 years were 147 and their 95 parents, who met inclusion criteria, were interviewed. She concluded that the main reasons for school dropouts are “distance of school from residence”. Biswas & Krishnan (2017) in their study entitled “A study on dropout of tribal students at secondary level in Hooghly district, West Bengal” stated the dropout issue among tribal students at secondary level in Hooghly District of West Bengal. A qualitative survey method was adopted. 8 schools from 2 blocks of Hooghly district were selected as sample. School records, questionnaire and interview schedule were used to collect the data. The study revealed that the causes of dropouts are poor economic condition, lack of conducive learning environment at home, attitude of parents towards schooling, lack of aspiration and attitude of non-tribal students towards tribal students etc. Das (2020) conducted a study on topic “Educational Status and Dropout Rate of Scheduled Tribe in West Bengal: A Study on Birbhum District”. The study found that some of the problems i.e. lack of interest in study, Economic problem, Health problem, Distance from home to school, Lack of awareness of parents, early marriage, lack of food and lack of proper guidance for drop outs of the Scheduled Tribe of the Birbhum districts. She also gave some suggestions to overcome it.

METHODOLOGY OF THE STUDY

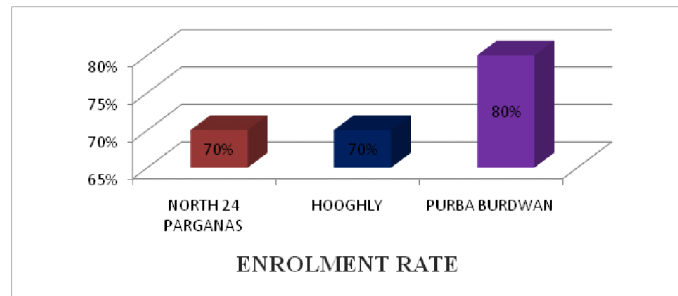
This study is done based on primary and secondary data. The sample area of the study is North 24 Parganas, Purba Burdwan and Hooghly districts in West Bengal. The Researchers has collected data from the Headmasters/Headmistress, Assistant teachers, students and guardians of the selected districts. In the present research work, the secondary data has been collected through books, journals, articles, gazettes and annual reports of the education departments. Through the various questionnaires, interview schedule data have been collected. In the present study, total 30 elementary schools from the selected districts have been taken as samples. In the present study, researcher used purposive stratified sampling for selection of sample. After collecting data present researchers analyzed the data by qualitative content analysis method.

FINDINGS

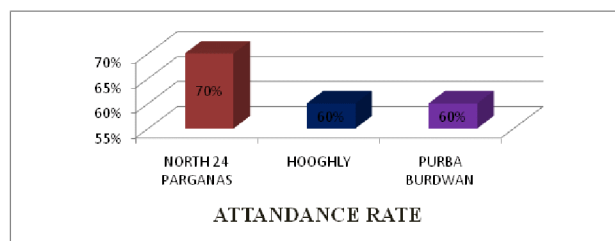
The main findings of the present study are presented below:

* The sign of drop out is seen in 24 Parganas (North) and Purbo Bardhaman Districts, but the drop out is lower in Hoogly district.

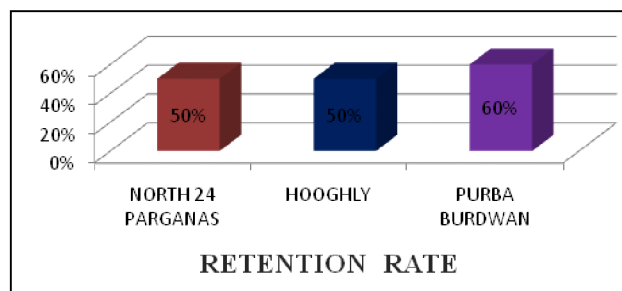
- It was also found that in the rural areas, percentage of enrolment rate of students is lower than urban areas.



- Drop out decreases the rate of attendance of above-mentioned districts. The below table shows the rate of percentage of daily attendance going below both in rural and urban schools of Hooghly, Purbo Bardhaman and the rural schools of 24 Parganas (North). In the schools of urban areas of 24 Parganas (North) district, it is slight higher than the other districts.

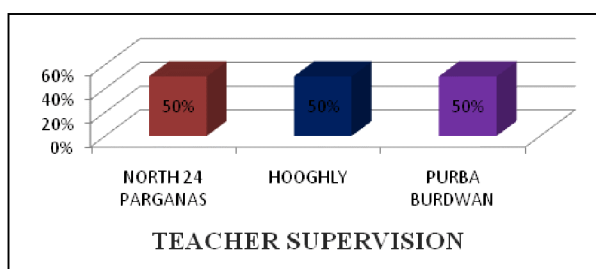


- Retention rate of students as a result of drop out did not increase too much in 24 Parganas (North), Hooghly and Burdwan districts. The retention rate is almost average in all the three districts. Though as a result of drop out the retention rate of students in Hooghly is slightly better than the other two districts.

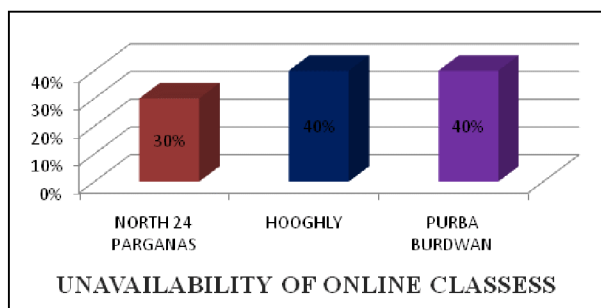


- Another important thing is that many students are engaged in various jobs. Due to pandemic situation many people were facing various problems in their livelihood. So, due

to their poor economic condition in the family, the students are compelled to sacrifice their education due to constraint situation. Practically the elementary education enrolled highest number of students. So, the teachers are not always able to look into these matter carefully due to the scarcity of infrastructure and teachers also. Teachers are not fully aware of the socio-economic condition of all the students. So, a gap is prevailing in this regard. From the data, it can be clearly mentioned that the percentage of teachers' supervision is almost average in all three districts in this respect. Teachers must carefully take up this matter and create a database of the students if required.



- There was another problem which is very much alarming specially in the rural areas which is the problem of early marriage specially among the girl child. Though they get various scholarship like SVMCM, Kanyasree, Aikyasree from the government to continue their education, but in some cases they have to sacrifice their education due to their family related matters.
- Face to face mode of contact in teaching is very much popular in our education system. But due to this unavoidable circumstance, online education system has been promoted and continued to minimize the gap. But in our country, it is very much challenging work specially in the rural areas because most of the students have no mobile phones, laptops or computers etc. due to their poor economic condition. So, they cannot access the system of online education properly. Due to this reason, there prevails a huge gap because many students cannot properly access the digital platform of education. So, they are being deviated from the mainstream.



- Motivation is one of the important factor. Due to lack of motivation from the family members and sometimes from the teachers, they are being deviated from the proper track. Proper care from the family members as well as the teachers is required regarding this matter. A good environment from the family and also from the schools is very much required.

SUGGESTION FOR THE IMPROVEMENT

Researcher gives some suggestions for the improvement of this system. These are stated under :

- First of all, a good co-operation is needed between the teachers and guardians. The responsibility of the teachers is to contact with the guardians and also the duty of guardians is to inform teachers about the development of the children.
- Another important thing is to develop a positive mindset for those children with respect to their condition. A good environment of schools and family is very much important for that. They need not to provide sympathy, but the children give empathy for their betterment from all ends.
- One of the most important things is that more skillful teachers should be appointed in all elementary schools for the better cares of those children.
- Modification of curriculum should be made carefully by an expert group which includes special cares for those children. The curriculum of the children should be more flexible and practical approaches must be the priority for them.
- Proper supervision is needed for the development of the children. Authority should arrange much more facilities for the students and they should impart proper instruction to the students so that the students learn proper usage of the things. Government initiative and financial support should be needed for those children. To minimize the learning gaps of the students during the pandemic times, Government of West Bengal also provided ‘Sikhan Setu’ and ‘Pathan Setu’ – a bridge learning material which prepared under the supervision of expert committee to fulfil the knowledge gap.

CONCLUSION

Drop out is an important issue in our education system. It is not only an easy matter. So, a collective effort is needed from the parts of all the stake-holders. Mid-day meal, Sabuj-sathi, Swami Vivekananda Merit cum means Scholarship etc. may strengthen the education system, and the positive mindset of all people. The initiative of Government can help us to reach us the target point. To remove all such barriers with the help of education, we must provide the free and compulsory education to all and also establish equity as well as equality.

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TOWARDS A HOLISTIC ASSESSMENT : EXPLORING THE POSSIBILITIES AND CHALLENGES OF NEP-2020'S PROPOSED TECHNIQUES

Abdus Safi

Assistant Professor, Ramakrishna Mission Brahmananda College of Education, Rahara, Kolkata-
700 118, West Bengal, India.

ABSTRACT

This article aims to analyze the comprehensive development of children by introducing innovative assessment techniques. Regular classroom assessments, self-assessments, and summative assessments are promoted by the NEP-2020 as essential instruments for gauging student progress. Additionally, the policy supports the use of online tests and e-learning, especially in secondary and postsecondary education. The suggested assessment methods include quizzes, role plays, project-based assessment, peer assessment, and self-assessment. In order to accurately assess student performance, the NEP-2020 also recommends the development of State and Central Level Evaluations, including board exams and achievement surveys. The policy also places a strong emphasis on creating special education zones to serve the needs of underprivileged kids and planning Olympiads for talented pupils. This article carefully explores the responsibilities played by significant stakeholders including NCERT, SCERT, and the Board of Assessment while offering helpful recommendations to address the unique needs of pupils who are struggling academically. The research approach used in this study incorporates a thorough analysis of qualitative data drawn from policy documents, research journals, and news articles, giving the findings a solid basis.

Keywords: NEP-2020, Assessment, Evaluation

INTRODUCTION

The aim of education is to ensure the holistic development of children. In this context, the NEP-2020 (National Education Policy 2020) placed significant emphasis on evaluating students' progress across various domains, including cognitive, affective, and psychomotor abilities. The National Curriculum Framework (NCF) - 2005 indicates that regular classroom assessments, including self-assessment, and summative assessments will be necessary for recording student progress. The Indian Ministry of Education is preparing to introduce new textbooks based on the 5+3+3+4 structure recommended by the NEP 2020.

To achieve its vision NEP-2020 introduced several assessment techniques for teachers and educators. These techniques include self-assessment, peer assessment, project-based assessment, quizzes, and role plays. Assessment techniques should allow the recording and tracking of development without adding to the child's workload. A thorough summative evaluation should be carried out at the conclusion of the preparatory phase. Portfolios and self-assessments can be used to document student development holistically. The intermediate stage of learning (classes 6 to 8) should be assessed using classroom assessment strategies such projects, discussions, presentations, experiments, investigations, role plays, journals, and portfolios. New curricular and pedagogical guidelines for the foundational, preparatory, middle, and secondary levels will be included in the NCF's fifth revision. Additionally, the NEP-2020 proposed the implementation of State and Central Level Evaluations, such as board exams, State Achievement Survey (SAS), National Achievement Survey (NAS), and PRAKASH. With a specific emphasis on e-learning, the New Education Policy 2020 sought to revolutionize and digitalize India's educational system. The pandemic hastened the transition to online learning, spurring rapid technology advancement in educational institutions and the creation of a variety of software and portals for learning. Implementing online assessments and exams is the responsibility of the National Assessment Centre PARAKH, School Boards, and NTA. The NEP 2020 has sped up e-learning in secondary and post secondary education (With two years of NEP 2020, How did it pave the way for e-learning in India?, 2022).

Furthermore, to evaluate gifted students, the NEP-2020 recommended organizing different Olympiads at national and international levels, as well as establishing project-based clubs. For the evaluation of dis-advantaged students, special education zones will be established. Beside supporting students with special talents NEP-2020 tried to uplift the students through different evaluation, assessment and pedagogical techniques under "Equitable and Inclusive Education campaign" (NEP 2020).

RATIONALE OF THE STUDY

The Study was conducted to understand the specific contributions and responsibilities of the stake holders like National Council of Educational Research and Training (NCERT), State Council of Educational Research and Training (SCERT), The Board of Assessment (BoA), in implementing the assessment techniques proposed by the NEP-2020. The study aimed to address the needs of students with learning difficulties. By analyzing the roles of these stakeholders, the study intended to identify potential challenges and opportunities in providing holistic assessment approaches for students with diverse learning needs. By highlighting suggestions at the end of the study, the researchers aimed to contribute to the discourse on inclusive education and provide actionable recommendations for supporting common students, differently abled students and gifted students through appropriate assessment techniques.

OBJECTIVES OF THIS STUDY

- To know the transforming Evaluation and Assessment pattern as proposed by NEP-2020.
- To find the role and functions of the major educational stakeholders such as SCERT and NCERT.
- To Know how much support is given by NEP-2020 to the gifted students and to uplift the students with special needs (CWSN) or Divyang.

METHODOLOGY

The methodology of this research project is based on a document analysis, where qualitative data from various sources such as research papers, journals, Government policy document, reports, and online newspapers were collected and analyzed using an interpretative approach.

Findings and Discussion on Assessment and Evaluation reform for Student Development as proposed by NEP - 2020

To measure “core capacities, competencies rather than months of coaching or memorization”, the NEP 2020 suggests changing the format of the board exams for grades 10 and 12. Tests based on cognitive abilities will be given to students in grades 3, 5, 8, 10, and 12. PARAKH standard-setting organization is suggested by the NEP 2020 to direct testing and recognize school education boards. Students’ progress cards for school-based assessment will be revised to include a “holistic, 360-degree, multidimensional report” that includes teacher, peer, and self-evaluation. For the purpose of establishing norms, standards, and guidelines for student assessment and evaluation, the Performance Assessment, Review, and Analysis of Knowledge for Holistic Development (PARAKH) will serve as a standard-setting organization. Universities can take a high-quality common aptitude test from the National Testing Agency (NTA), which can also be used for specialized common subject exams. Universities will not be required to use the NTA’s provision for testing (Deka, 2020).

(i) Performance Assessment, Review, and Analysis of Knowledge for Holistic Development (PARAKH)

The National Assessment Centre (PARAKH), a standard-setting organization to be established by the Indian Ministry of Education. It would provide standardized assessment and evaluation for all recognized school boards throughout India. The PARAKH would oversee all student assessment work in India and be a part of the National Council for Educational and Research Training (NCERT). In order to track learning outcomes across the nation, the organization will also conduct the National Achievement Survey (NAS) and direct the State Achievement Survey (SAS). Besides overseeing examination boards, including state education boards, PARAKH will

be in charge of all student evaluation activities in India. In order to create and build capacity for national and sub-national assessment centers to incorporate international evidence and strengthen assessment systems in India, the center has requested bids from consulting firms with international experience. In order to track the country's progress towards its learning objectives, the proposed organization will also conduct the National Achievement Survey (NAS) and direct the State Achievement Survey (SAS). The objective is to increase collaboration between school boards, guarantee academic standards are equivalent across all school boards, and change the assessment pattern to focus on meeting skill criteria that take into account the most recent research. NEP 2020 recommends switching from tests that only measure memorization to one that also measure higher-order abilities like analysis, critical thinking, and conceptual clarity. The organization will create and execute technical standards for different types of standardized tests in primary, middle, and secondary education (Radhika, 2022).

(ii) Continuous and Comprehensive Evaluation (CCE)

The National Education Policy 2020's suggested three-core subject test, semester exams, and continuous and comprehensive evaluation (CCE) systems to promote development of students. Board exams may not always be the best indicator of a student's aptitude, and new methods of assessment are required to prevent the digital divide from getting worse. Instead of concentrating primarily on old tests, governments and institutions should place a higher importance on remediating children and bridging learning gaps maintaining equivalent academic standards across all the school boards. The NEP 2020 acknowledge the need to move towards formative assessment methods that gauge performance throughout the learning process rather than at the conclusion. It is essential to create a more effective student evaluation system now for use in the future (Scindia, J., 2021).

(iii) School Level Assessment and Evaluation

A solid foundation for transformational reforms in India's education system has been established by the National Education Policy (NEP). The way students are currently assessed in India simply takes grades into account, not their overall growth. Due to the existence of several boards and grading systems, there is a need for standardization and universalization of the student assessment. The current student assessment solely assesses memory and is not descriptive. The NEP plans to evaluate children using technology, track student growth through descriptive metrics, create a comprehensive progress card, and involve parents in the evaluation procedure. With a clear representation of the students' actual level of knowledge and performance, the emphasis should be on inspiring pupils to grow their skills in the appropriate direction and work intelligently (Redesigning student assessment under National Education Policy 2020, 2022).

The educational philosophy known as outcome-based learning (OBL) emphasizes student-centered learning as per defined goals. It is a major area of emphasis for India's National Educational Policy (NEP 2020). The emphasis is on evaluating student performance or results, and it is a student-centric educational technique that gives students the freedom to decide why and how they want to learn. In order to encourage higher-order learning, application, critical thinking, and problem-solving abilities, teachers have a difficult job as co-learners and collaborators. Learning outcomes are different from learning objectives and the outcomes are the responses to the questions that the teacher wants a course to raise. A learning outcomes-based curricular framework must be created in order to implement outcome-based education. The NEP 2020 calls for the creation and adoption of pedagogies that place a strong emphasis on the holistic development of students, such as discussion-based learning, art-integrated learning, flipped classrooms, etc. To ensure that learning objectives are being met, assessment is essential. A strong assessment and evaluation system should place emphasis on thorough assessment that emphasizes formative rather than summative evaluation (Ubaidullah, 2022).

For the academic year 2022–2023, CBSE is making modifications to the evaluation procedure for the Class 10 and Class 12 Board Exams. The National Education Policy (NEP-2020) will serve as the foundation for the new evaluation procedure, which will be comprehensive, skill and competency-based. To provide a comparative review of a child's growth, the CBSE assessment method will be based on the evaluation of a student in Classes 3, 5, and 8. Students will be evaluated using competency and skill-based questions to promote critical thinking. The question papers will include two different sorts of structural alterations, and 20% of internal evaluations will be based on feedback from peers, parents, and teachers. In addition, CBSE intends to implement holistic assessment cards for students as a pilot project. In these cards, teachers, parents, peer groups, and the students themselves will evaluate the pupils (Pathak, 2022).

(iv) National Achievement Survey (NAS)

On November 12, 2021, more than 5 lakh educators from 1.18 lakh schools spread across 720 districts in both urban and rural areas participated in the National Achievement Survey. The assessment was done in 22 distinct languages and encompassed government, government-aided, and private schools in India. 44% of school teachers in India do not have enough workspace, and 65% of them are overworking, according to the Union Education Ministry. The National Education Policy was only discussed by 58% of the teaching staff. Only 52% of teachers participated in programmes for professional growth run by DIETs, CBSE, and NCERT (65% percent teachers overburdened, only 58% participated in NEP discussions: MoE survey, 2022).

For students in Classes 3, 5, 8, and 10, the National Achievement Survey (NAS) 2021 was conducted in 24 states and UTs, with 92% of the intended sampled children participating. This

accomplishment survey is the first to be conducted following the publication of the National Education Policy (NEP) 2020. The test item development, testing, and finalisation of NAS 2021 were handled by NCERT. The test was administered by CBSE in coordination with the states and UTs at the sampled schools. To comprehend the varied situations and viewpoints of students, teachers, and schools, student achievement tests, pupil questionnaires, teacher questionnaires, and school surveys were gathered. The NAS 2021 outcomes will assist to strengthen the capacity of educators and government representatives involved in providing education to the nation and offer a rich source of evidence and data for study and development (Parthiban, 2021).

(v) Assessment of Children with Special Needs (CWSN) or Divyang

The Indian government has taken several steps to support differently abled children in their education. These include provision for reservation in Kendriya Vidyalayas (KVs) and Jawahar Navodaya Vidyalayas (JNVs), barrier-free access in school buildings, training for teachers, engagement of special educators, procurement of assistive devices, fees exemptions, and providing accommodations. The government has also enacted the Rights of Persons with Disabilities (RPwD) Act, 2016, and implemented the Samagra Shiksha scheme for inclusive education. These measures align with the National Education Policy (NEP), 2020 (Steps Taken by The Government for Differently Abled Children, 2021).

NEP-2020 emphasizes inclusive education, provides resources and assistive devices, and ensures safety and security for these children. The policy focuses on enabling children with disabilities to fully participate in the regular schooling process. Special educators with cross-disability training will be recruited for children with severe or multiple disabilities. The National Institute of Open Schooling (NIOS) will develop modules to teach Indian Sign Language. Home-based education will be an option for children who are unable to go to schools, with equal treatment. Assessment and certification guidelines will be formulated to ensure equitable access and opportunities for students with learning disabilities. Teacher education programmes will include training on teaching children with specific disabilities. The reforms aim to improve the quality of life for children with disabilities through increased access to education, employment, and services (Education for Children with Disabilities and NEP-2020, 2021).

The Samagra Shiksha programme provides interventions for inclusive education, such as special training, remedial teaching, vocational education, and financial support for CWSN children. The programme offers financial support, aids and appliances, and provision for special educators at the cluster/school level for CWSN children studying in government, government-aided, and local body schools (Education for CWSN: NEP's Recommendations SS's Provision, 2021).

(vi) National and International Olympiad

A number of Olympiad platforms for teacher upskilling have grown in popularity in India, with an emphasis on the government's goal of empowering educators who are passionate, highly qualified, professionally sound, and well-equipped with contemporary teaching standards. Some of the Olympiad platforms for teachers in India are the Indian Association of Physics Teachers (IAPT), the Centre for Teacher Accreditation (CENTA) Olympic Programme, the HBCSE Olympiads, the International Teachers' Olympiad from Suraasa, and the Mathematics Teachers Association India (MTA-I). To give maths teachers access to training programmes and instructional resources, the Mathematics Teachers Association of India (MTA) hosts an activity-based olympiad. Teachers can understand instructional methods that make mathematics more interesting and pleasurable because of MTA. Teachers participating in these Olympiads have the chance to develop, grow, and improve their teaching techniques besides earning certificates, acknowledgment at the state and national levels, and nominations for teacher impact awards (NEP focused 'teacher olympiads' to upskill Indian educators, 2022).

Olympiads give students the chance to compete outside of the scope of the classroom while honing their talents in subjects like science, math, and language. Examples of Olympiads that aid in enhancing youths problem-solving skills, critical thinking, and financial literacy include the Primary Olympiad and the International Finance Olympiad. Over the course of seven years, the International Finance Olympiad (IFO) has served more than 48,000 students in 162 cities and five nations. IFO collaborates with many schools in Dubai, Qatar, Kuwait, and Sharjah in addition to more than 1000 schools in India. The Global Economics Olympiad (GEO) was established to inspire students to study economics and understand its importance. Students in classes VIII through XII can compete at the international level in the Global Olympiad on Aptitude (GOA), sponsored by PRATHAM Test Prep, to improve their aptitude abilities. Students who participated in Olympiads learn how to recognize their potential and refine their analytical and problem-solving abilities (Enhancing students' aptitude through Olympiads for holistic development, 2020).

The aim of the International Teachers' Olympiad 2022 was to appreciate, honor, and reward teachers. Over 40,000 teachers from 1800+ schools in 30+countries registered for the Olympiad, and it anticipates over a million this year. Teachers can assess their own performance against national profession standards for teachers through the Olympiad and become more assured, competent, and lifelong learners (International Teachers' Olympiad 2022).

(vii) Academic Credit Bank (ABC)

Students have more freedom under NEP-2020 to switch between subjects, take breaks, and finish their degrees in seven years. With the creation of an Academic Bank of Credit (ABC), students are now able to acquire credits from numerous accredited higher education institutions

(Ishaq, M. G., 2023). Higher education institutions offering online and distance learning courses will be required to create Academic Bank of Credit (ABC) IDs for their students and deposit their credits. The ABC is a national-level initiative that promotes curriculum flexibility and academic mobility among institutions through a credit transfer mechanism. Each student will have a unique and individual academic bank account in digital form. The ABC IDs will be integrated with the learning management systems (LMS) of universities offering online programs. The National Education Policy (NEP) 2020 envisions the ABC to facilitate academic mobility, allowing students to study in different higher education institutions with a credit transfer mechanism (Mandatory for HEIs offering online, distance courses to create students' Academic Bank of Credit IDs: UGC, 2022).

The Odisha State Higher Education Council (OSHEC), The Panjab University (PU) syndicate have approved the implementation of the Academic Bank of Credits (ABC) following the directive from the University Grants Commission (UGC). The ABC platform, developed by the National e-Governance Division, will digitally store academic credits earned by students from registered institutions, facilitating credit transfer and academic mobility also. It will provide services like academic credit verification, accumulation, transfer, and authentication of academic awards (Pradhan, 2023; Ovais, 2023).

SUGGESTIONS TO OVERCOME THE CHALLENGES AND ENHANCE THE ASSESSMENT PROCEDURE

To enhance the success of assessment and evaluation of students as proposed in the National Education Policy 2020, the following steps can be adopted for improvement—

- ***Embrace Technology-Enabled Assessments:*** Teachers need to explore digital platforms, online quizzes, simulations, and virtual reality experiences to assess students' knowledge and skills. Technology-enabled assessments can provide immediate feedback, personalized learning path ways, and opportunities for self-paced learning.
- ***Foster Peer and Self-Assessment:*** Teachers need to encourage students to participate actively in the assessment process through peer review assessment and self-assessment. Provide guidelines and rubrics to help students assess their own work and provide constructive feedback to their peers. Peer and self-assessment not only develop students' metacognitive skills but also promote a sense of responsibility and ownership of their learning.
- ***Use Portfolios for Holistic Assessment:*** Teacher should implement portfolio-based assessments where students compile their best work across different subjects or skills over a period of time. Portfolios allow students to showcase their progress, reflect on their learning

journey, and demonstrate a wide range of abilities beyond traditional exams. They provide a comprehensive view of students' growth and development.

- **Promote Real Life Assessments:** Designing assessments that align with real-life situations is a challenge. Teacher should Create authentic tasks that require students to apply their knowledge and skills in practical scenarios. Authentic assessments could include problem-solving exercises, case studies, simulations, or real-world projects. They provide a meaningful context for assessment and enhance students' engagement and motivation.
- **Provide Professional Development for Educators :** HEIs need to encourage free professional development programs for teachers to enhance their assessment literacy and pedagogical skills. It will equip teachers with the knowledge and strategies to design and implement innovative assessment methods effectively. Continuous professional development ensures that teachers stay updated with best practices and can provide quality feedback to students.
- **Involve Parents and Guardians :** The NEP 2020 suggests to engage parents and guardians in the assessment process by providing regular updates on their child's progress, sharing assessment results, and involving them in goal-setting discussions. Collaborative partnerships between parents, teachers, and students foster a supportive learning environment and enhance student achievement.

CONCLUSION

The NEP-2020 proposes significant changes to the evaluation and assessment pattern in India. The policy emphasizes the need to move away from traditional, memory-based exams and focus on evaluating core competencies, cognitive abilities, and holistic development. It advocates for continuous and comprehensive evaluation (CCE) systems, alternative evaluation methods, and formative assessment approaches that track students' progress throughout the learning process.

The NEP-2020 also proposed setting up of the Performance Assessment, Review, and Analysis of Knowledge for Holistic Development (PARAKH) as a standard-setting organization for assessment and evaluation. PARAKH is expected to provide standardized assessments, establish norms and guidelines, and ensure academic standards are equivalent across all school boards. The NEP-2020 highlights the significance of national and international Olympiads for evaluating gifted students and establishing project-based clubs. It also introduces the National Achievement Survey (NAS) and State Achievement Survey (SAS) to track learning outcomes and assess the progress of students at various levels.

The NEP-2020 brings comprehensive reforms to assessment and evaluation practices in Indian education. The policy emphasizes a shift towards student-centered, outcome-based learning, and

aims to create a more inclusive and equitable education system. By adopting these changes, India seeks to provide a holistic and effective education system that promotes the overall development of students.

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A STUDY ON PERCEPTION AND AWARENESS TOWARDS MOOCS AMONG THE PRE-SERVICE TEACHERS

Avishek Khanra

M.Ed. Student, Baba Saheb Ambedkar Education University (Erstwhile WBUTTEPA), Kolkata

ABSTRACT

Massive Open Online Courses (MOOCs) are a recent but hugely popular phenomenon in the online learning world. They are hailed by many as a solution for the developing world's lack of access to education because MOOCs can provide learning opportunities to a massive number of learners from anywhere in the world as long as they can access the course through Internet. It reaches a global domain of learners and on the other hand promulgates knowledge in an efficient digital platform, besides intertwining a huge network of scientists, professors, teachers, scholars, students and different stakeholders related to education system. The present study is conducted to assess the perception and awareness towards MOOCs among the pre-service teachers by taking 42 samples from Paschim Medinipur district in West Bengal. A well designed questionnaire has been used to collect the primary data; which was developed by *Sruti Sruba Bharali*. The result revealed that perception and awareness towards MOOCs is little higher among the male category students than the female counterpart. It has also been observed that perception and awareness towards MOOCs is little higher among the students from urban area than the rural counterpart. By using Inferential statistics (t-test); it was found that; these results were not statistically significant. Hopefully these will be helpful to the students, researchers, educationist, policy makers, government, schools, colleges and universities to successfully implement MOOCs in present education system.

Keywords : Perception, Awareness, MOOCs, Pre-service teachers, Gender, Habitat.

INTRODUCTION

Massive Open Online Courses (MOOCs) have emerged as one of the most potential tools in present quality education and worldwide since it's a massive training programme to a huge domain of population. On one hand, the global domain of learners has been using it and on the other hand it promulgates knowledge in an efficient digital platform, besides intertwining a huge network of scientists, professors, teachers, scholars, students and different stakeholders related to education system.

Online learning has taken a new turn with the introduction of Massive Open Online Courses (MOOCs) (Liyanagunawardena, Adams, & Williams, 2013), a recent addition to the range of

online learning options. Massive Open Online Courses (commonly MOOCs) is a path breaking and hopefully the most discussed sector in the digital era of distance education (Chatterjee, P. et al., 2014). Online learning through MOOCs platforms has been considered a revolutionary development in the education system, with scalable, seamless and equitable access to course from universities, anywhere in the world. The ubiquitous penetration of internet and mobile communication technologies has brought about disruptive, but desirable, transformations in the higher education landscape, by making it inclusive. India, after the USA, dominates the global growth in MOOCs' enrolments (Chauhan, 2017). The Government of India (GoI) has been extensively promoting MOOCs, through its SWAYAM platform (GoI, 2020). There is an exponential growth in the number of courses offered through MOOCs platform and the number of universities participating in these platforms, worldwide. As per a report by Shah (2018), over 900 universities around the world had offered 11.4k courses on the various MOOCs platform, by the end of 2018. Several universities in India have entered into strategic partnerships with MOOCs platforms for providing content and certifications to the aspirants.

Different aspects are discussed over the emergence and key factors of MOOCs in India. India is quickly becoming a prime hub for MOOCs in Asia. With the rise of digital learning, India is seeing an increase in the number of enrollment of online courses. The government of India has also taken several steps to promote the use of MOOCs, such as providing free access to online courses and encouraging universities to offer more online courses. Additionally, the Indian government has launched initiatives such as the National Digital Library of India which provides access to a wide range of digital resources, including MOOCs. With the increasing availability of MOOCs in India, more students are taking the advantages of it. There are a few ways that MOOCs can be incorporated into a ULE (Unique Learning Experience). One way is to have a MOOC section on the website or portal where users can find and access various courses. Another way is to have MOOCs integrated into the Learning Management System (LMS) used by the institution. This would allow instructors to create and manage courses using the LMS, and students to access the courses from anywhere. Finally, MOOCs could be made available as part of the institutional repository, which would allow users to search for and access courses in a various format.

STATEMENT OF THE PROBLEM

MOOCs have its impact on different aspects of education. In West Bengal, a large number of students are involved in Teacher Education programme. MOOCs have brought a revolution in the field of online education. It is important for students to be aware of the advantages and disadvantages of online education so that they can make an informed decision. Students should make sure that they understand the learning environment, resources available, and the technical support available before deciding to pursue online education. So, it is very necessary to find out the

perception and rate of awareness among these students. Many researchers have conducted studies in this domain. But, a few studies have been conducted on assessing the perception and awareness towards MOOCs among the pre-service teachers in West Bengal especially in Paschim Medinipur district.

Therefore, the researcher has identified a researchable knowledge gap regarding the perception and awareness towards MOOCs with the focus on pre-service teachers. So, the problem of the present study was specified and stated as, “**A Study on Perception and Awareness towards MOOCs among the Pre-service teachers**”.

OBJECTIVES OF THE STUDY

To determine the perception and awareness towards MOOCs among the pre-service teachers, the following objectives were identified:

- i. To explore the present status of perception and awareness towards MOOCs among the pre-service teachers in Paschim Medinipur district.
- ii. To explore the differences about the perception and awareness towards MOOCs among the pre-service teachers on the basis Gender.
- iii. To explore the differences about the perception and awareness towards MOOCs among the pre-service teachers on the basis Habitat.

HYPOTHESES OF THE STUDY

On the basis of objectives of the study the following null hypotheses were formulated :

H₀1 : Gender does not play a significant role in variation of the perception and awareness towards MOOCs among the pre-service teachers in Paschim Medinipur district.

H₀2 : There exists no significant difference between rural and urban pre-service teachers on the basis of perception and awareness towards MOOCs in Paschim Medinipur district.

METHODOLOGY OF THE STUDY

The present study followed the quantitative research design. It was conducted based on cross-sectional survey research framework.

Survey type of study were generally conducted to collect details illustration of existing phenomena with the intention of employing data to justify present-day situation and practices or to make more and more relevant design for improving them. Therefore, a survey research design was used for this study because it is realized that survey method is a most suitable technique for collecting raw information in form of qualitative and quantitative data of the respective area, here

as like; perception and awareness towards MOOCs among the pre-service teachers in Paschim Medinipur district and it is also a practice from large population involving respondents of different types of background.

- **The Population:** Pre-service teachers in teacher education institutes of Paschim Medinipur district were considered as population of the study.
- **The study sample:** As the survey research requires a good number of participants which represent the whole population to collect relevant information from the target group. The present study was conducted on total participants of 42 pre-service teachers who were randomly selected from teacher education institute of Paschim Medinipur district in West Bengal. The summary of sample distribution was shown in table no. 1.

Table no. 1 : Distribution of sample according to different socio-economic parameters

Sl. No.	Variables		Total number of students	Percentage
1.	Gender	Male	24	57.14%
		Female	18	42.86%
2.	Habitat	Urban	16	38.10%
		Rural	26	61.90%

RESEARCH INSTRUMENTS

It is much important for any research to gather relevant and appropriate data from the concerned sample to test the research hypothesis. The researcher has used a set of questions in a statement form to collect the required socio-economic information and data. In the present study, the researcher has used a questionnaire which was developed by *Sruti Sruba Bharali*. This questionnaire has 13 questions; those were presented with two response choice. Subject had to put a tick in the appropriate box to say 'Yes' or 'No'.

DATA ANALYSIS AND INTERPRETATION

A. Descriptive statistics: This section deals with the analysis of present status of perception and awareness towards MOOCs among the pre-service teachers on the basis of different variables using descriptive statistics.

- **Assessment of perception and awareness about MOOCs among the pre-service teachers on the basis of their Gender variable.**

Perception and awareness about MOOCs of the total number of pre-service teachers on the basis of gender variable is shown in table no. 2 :

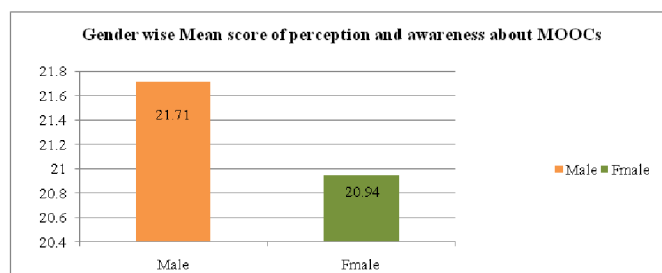
Here, first of all table no. 2 was used to ascertain the mean value, standard deviation and the result revealed that the mean score of perception and awareness about MOOCs of pre-service teachers on the basis of gender variable is given below :

Table no. 2 : Score of perception and awareness about MOOCs among the pre-service teachers on the basis Gender variable.

SCORE OF PERCEPTION AND AWARENESS ABOUT MOOCs					
Score	Category of Gender	N	Mean	Std. Deviation	Std. Error Mean
	Male	24	21.71	2.926	0.597
	Female	18	20.94	2.940	0.693

The mean score of perception and awareness about MOOCs of Male students (Mean-21.71, SD-2.926) is higher than the mean score of Female students (Mean-20.94, SD-2.940). These descriptive statistics shows that there are few differences in mean score of perception and awareness about MOOCs among the male and female students. The illustration is given in figure no. 1.

Figure no. 1 : Mean score of perception and awareness about MOOCs based on Gender.



- **Assessment of perception and awareness about MOOCs among the pre-service teachers on the basis of their Habitat variable.**

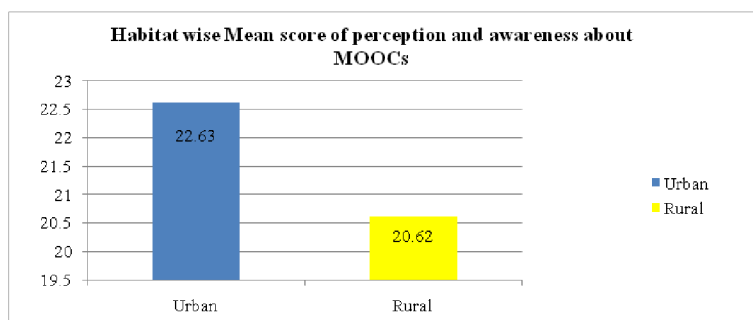
Perception and awareness about MOOCs of the total number of pre-service teachers on the basis of habitat variable is shown in table no. 3:

Here, first of all table no. 3 was used to ascertain the mean value, standard deviation and result revealed that the mean score of perception and awareness about MOOCs of pre-service teachers on the basis of habitat variable is given below:

Table no. 3 : Score of perception and awareness about MOOCs among the pre-service teachers on the basis Habitat variable.

SCORE OF PERCEPTION AND AWARENESS ABOUT MOOCs					
Score	Habitat	N	Mean	Std. Deviation	Std. Error Mean
	Urban	16	22.63	2.754	0.688
	Rural	26	20.62	2.801	0.549

The mean score of perception and awareness about MOOCs of students from urban area (Mean-22.63, SD-2.754) is higher than the mean score of students from rural area (Mean-20.62, SD-2.801). These descriptive statistics shows that there are few differences in mean score of perception and awareness about MOOCs among the rural and urban students. The illustration is given in figure no. 2.

Figure no. 2 : Mean score of perception and awareness about MOOCs based on Habitat.

B. Inferential statistics : Parametric Statistical procedures allow to draw inference about populations based on samples of those populations. To make these inferences, we must be able to make certain assumptions about the shape of the distributions of the population sample.

In the field of Social Science, there are many occasions when we are more interested in knowing about the significance of the different between two sample means drawn from the same populations rather than merely knowing the significance of the computed samples means. The problem is the determination of the significance of the differences between two computed means. One is bond question whether the difference, if any, between the two samples means is the result of the sample fluctuations which have occurred incidentally or indicates some really valid differences which help in drowning some useful interpretations (Mangal, 2017).

Hypotheses Testing :

H₀1 : Gender does not play a significant role in variation of the perception and awareness towards MOOCs among the pre-service teachers in Paschim Medinipur district.

Table no. 4 : t-test showing the Gender-wise Comparison the perception and awareness towards MOOCs.**Independent Samples t-test Gender wise different dimension of the perception and awareness towards MOOCs**

Gender	N	Mean	SD	SE _M	t	df	MD	p (sig. at 2-tailed)	Std. Error Difference	Remarks
Male	24	21.71	2.926	0.597	0.836	40	0.764	0.408	0.914	*NS (p>0.05)
Female	18	20.94	2.940	0.693						

(*NS- Not Significant)

This independent sample t-test analysis indicates that the 24 male students have a mean of 21.71 and SD of 2.926 and the 18 female students has a mean of 20.94 and SD of 2.940. Here, the mean score of male students (i.e. 21.71) is higher than that of female students (i.e. 20.94). It signifies that the initial descriptive statistics revealed the perception and awareness towards MOOCs of male pre-service teachers is just higher than the female counterpart. But to ascertain whether this difference is statistically significant or not significant, the researcher further applied the t-test. The compute 't-value' i.e. 0.836 is smaller than the critical 't-value' i.e. 1.96 at 5% level. The critical value required to reach 5% level of significance and the $p > 0.05$ as $P = 0.408$. Hence, the 't-value' is not significant at 0.05 level which indicates that it does not differ significantly at 0.05 level. Consequently, **the null hypothesis can't be rejected at 5% level of significance.**

H₀2 : There exists no significant difference between rural and urban pre-service teachers on the basis of perception and awareness towards MOOCs in Paschim Medinipur district.

Table no. 5 : t-test showing the Habitat-wise Comparison the perception and awareness towards MOOCs.**Independent Samples t-test Habitat wise different dimension of the perception and awareness towards MOOCs**

Habitat	N	Mean	SD	SE _M	t	df	MD	p (sig. at 2-tailed)	Std. Error Difference	Remarks
Urban	16	22.63	2.754	0.688	2.272	40	2.010	0.029	0.884	*NS (p>0.01)
Rural	26	20.62	2.801	0.549						

(*NS- Not Significant)

This independent sample t-test analysis indicates that the 16 students from urban area have a mean of 22.63 and SD of 2.754 and the 26 students from rural area has a mean of 20.62 and SD of 2.801. Here, the mean score of students from urban area (i.e. 22.63) is higher than that of students from rural area (i.e. 20.62). That means the initial descriptive statistics revealed that the perception and awareness towards MOOCs of pre-service teachers from urban area is just higher than the rural counterpart. But to ascertain whether these difference is statistically significant or not significant. So, the researcher further applied the t-test. The compute 't-value' i.e. 2.272 is smaller than the critical 't-value' i.e. 2.58 at 1% level. The critical value required to reach 1% level of significance and $p > 0.01$ as $p = 0.029$. Hence, the 't-value' is not significant at 0.01 level which indicates do not differ significantly at 0.01 level. Consequently, **the null hypothesis can't be rejected at 1% level of significance.**

FINDINGS OF THE STUDY

On the basis of gender variable, out of total 42 pre-service teachers of teacher education institutes, the mean score of the perception and awareness towards MOOCs is little higher among the male (Mean-21.71, SD-2.926) category students than the female counterpart (Mean-20.94, SD-2.940); which did not stand statistically significant as $p > 0.05$.

On the basis of habitat variable, out of total 42 pre-service teachers of teacher education institutes, the mean score of the perception and awareness towards MOOCs is little higher among the students from urban area (Mean-22.63, SD-2.754) than the rural counterpart (Mean-20.62, SD-2.801); which did not stand statistically significant as $p > 0.01$.

DISCUSSION

The study investigated the overall perception and awareness towards MOOCs with respect to different socio-economic variables viz.- Gender and Habitat of the students and also estimated the prevalence rate of perception and awareness towards MOOCs among the pre-service teachers at teacher education institute, which are very important for student teacher in Paschim Medinipur district as well as all over the West Bengal for enhancing their psycho-social competencies for the adaption to the changing environment in the modern era of education system.

In present study, the result revealed that the mean score of perception and awareness towards MOOCs is little higher among the male category students than the female counterpart, Inferential statistically it was not significant ($p > 0.05$). The reason for the outcome of such result was that using new technologies like MOOCs to improve and change the education system shows little more interest among male students than female students. Male users are found to have a greater tendency towards novelty seeking (Chau and Hui, 1998). This is particularly applicable when the technology is new. Venkatesh et al. (2012) found that the impact of hedonic motivation is higher among young male users during the early use off new technology. But on the other hand F. A.

Alshehri (2018) said that *females indicated higher motivation levels than males* on the context of MOOCs.

From the statistical analysis of the present study it revealed that, the mean score of perception and awareness towards MOOCs is little higher among the students from urban area than the rural counterpart, Inferential statistically the difference was found to be not significant ($p>0.01$). The causes behind this type of result were, internet system and technology services are not available or sufficient in rural area and also the students from rural part are not too good experienced about MOOCs. The IT infrastructure has improved a lot in the urban areas, the basic infrastructure needed to implement MOOCs is still absent in the rural areas (Chatterjee, et al., 2014). ‘Access’ to digital technologies in parts of developing countries (for example, other than the capital and metropolitan areas) are still insufficient to support online learning (Liyanagunawardena, 2012).

The educational policy framers, administrator, teachers and teacher educators may adopt some realistic measures or strategies in the light of the present study. All of us have a common mission to develop the perception and awareness towards MOOCs at teacher education institute for pre-service teachers. We have to achieve that as early as possible.

POLICY SUGGESTIONS

Following are some suggestions for overcoming the obstacles of the way of MOOCs in education system :—

- i. To develop an adequate infrastructure.
- ii. To make suitable curriculum for Various of MOOC courses.
- iii. To provide internet connection to the student for free or at low cost.
- iv. To arrange more and more seminars, workshops and symposiums about MOOCs.
- v. Government should take more responsibility to spread MOOCs all over the India; especially in rural areas.

SUGGESTIONS FOR FURTHER RESEARCH

Further studies can address the following issues to have more insights on the subject. The present study is not an end in itself rather than it is an on-going journey to reveal the scenario of the perception and awareness towards MOOCs at teacher education institutes for pre-service teachers. This study opens up new grounds for further researches. Looking to the overall research study, it can be observed that there is still further scope for research in the following areas:

- i. The present study is restricted to pre-service teachers only. A similar study may be conducted on Secondary or Higher secondary school students, Undergraduate students and Post-graduate students also.

- ii. The present study is restricted to only Paschim Medinipur district. A similar research may also be conducted in other districts of West Bengal.
- iii. A similar study may be conducted on students with special needs and gifted children.
- iv. In this study the researcher has used only two socio-economic variables (Gender & Habitat). But in future such as age, education, occupation, income, religion, caste, etc. these variables can be used to analyze the data more accurately and to get more in-depth insights.
- v. Here, the researcher used 42 samples. Sampling size can be enhanced while doing this type of research in future.

Further studies may also concentrate on explaining the underlying processes through which MOOCs create value to the learners, as well as investigating the effectiveness of MOOCs in enhancing the learning experiences and improving the academic performance of the learners. In addition, research may be conducted on various approaches and strategies to optimize the learning experiences in MOOCs. For example, how to design and implement effective incentives for learning and how to tailor the learning experience for different learners, taking into account their different backgrounds, objectives and levels of knowledge. Furthermore, further studies may be conducted to understand better the effects of MOOC pedagogy and methods on the learning outcomes and impact on students, as well as the ability of MOOCs to foster collaboration and dialogue among learners. Additionally, research may be conducted to identify the best approaches and strategies to evaluate and assess the knowledge and skills acquired by the learners in MOOCs.

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CHILD SEXUAL ABUSE IN SCHOOL : EFFECTS AND THE ROLE OF THE PARENTAL SUPPORT

Dr. Prodip Das

Assistant Professor and HOD, Department of Education, Hiralal Mazumder Memorial College for Women, Dakshineswar, Kolkata-700 035, West Bengal.

ABSTRACT

Child Sexual Abuse is a widespread problem with grave life-long outcomes. The victim many a times experience trauma which affects their social and psychological well-being. The effects of Child Sexual Abuse usually include low self-esteem, a feeling of worthlessness, a lack of trust in adults and an abnormal or distorted view of sex. The effects can be so strong that the child may even become suicidal. Children who have suffered from sexual abuse are also at an increased risk of future abuse and may become child abusers themselves. Recognizing the extent and the seriousness of the problem of Child Sexual Abuse, there has been a proliferation of school-based prevention programs. In conjunction with the children's programs, there must have also efforts to develop a parent educational component, because parents are logical ones from whom children may seek help; educating them about abuse issues can be an important part of prevention. So, the purpose of this paper is to examine Child Sexual Abuse in school and the various factors that may interact with these effects. It also can be observed that the possible parental roles in preventing the abuse of the child and address the issues that might arise from this involvement. These include the deskillling of parents, the use of gender-neutral terms which serve to obscure who actually abuses and who is held responsible for preventing abuse, and the reaction to intervention in the family.

Keywords: Sexual Abuse, Children, Effects, Family, Parent, Prevention, Program etc.

“Child is the Father of Man”

—*William Wordsworth*

INTRODUCTION

The term ‘Child’ can be used to mean either an offspring or someone who has not reached full economic and rural status as an adult in a society. Individuals in the latter state are passing through an age-related period known as childhood. This is the period where behavior and activities of a person's built is personality. So, emotional, physical and sexual abuse can have an impact across an entire lifetime.

Sexual abuse in childhood is a subject that has received much attention in recent years. 28% to 33% of women and 12% to 18% of men were victims of childhood or adolescent sexual abuse

(Roland, 2002, as cited in Long, Burnett, and Thomas, 2006). Sexual abuse that does not include touch and other types of sexual abuse are reported less often, which means the number of individuals who have been sexually abused in their childhood may actually be greater in number in real situation (Maltz, 2002). Sexual abuse is hard to define because it can be appeared in many different forms, at different levels of frequency and at the variation of circumstances it can occur within and different relationships that it may be associated with. Maltz (2002) gives the following definition, “Sexual abuse occurs whenever one person dominates and exploits another by means of sexual activity or suggestion”. The definition of child sexual abuse formulated by the 1999 WHO Consultation on Child Abuse Prevention which stated, “Child Sexual Abuse is the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or the violates the laws or social taboos of society. Child Sexual Abuse is evidenced by this activity between a child and an adult or another child who by age or development is in a relationship of responsibility, trust or power, the activity being intended to gratify or satisfy the needs of the other person. This may include, but is not limited to :

- The inducement or coercion of a child to engage in any unlawful sexual activity.
- The exploitative use of a child in prostitution or another unlawful sexual practices.
- The exploitative use of children in pornographic performance and materials.

Sexual behaviors can include touching breasts, genitals and buttocks while the victim is either dressed or undressed. Sexual abuse behavior also included exhibitionism, cunnilingus, fellatio, or penetration of the vagina or anus with sexual organs or objects.

Features that characterize child sexual abuse include :

- Physical force/violence is very rarely used, rather the perpetrator tries to manipulate the child’s trust and hide the abuse.
- The perpetrator is typically a known and trusted caregiver.
- Child sexual abuse often occurs over many weeks or even years.
- The sexual abuse of children frequently occurs as repeated episodes that become more invasive with time. Perpetrators usually engage the child in a gradual process of sexualizing the relationship over time (i.e. grooming).
- Paedophiles are individuals who prefer sexual contact with children to adults. They are usually skilled at planning and executing strategies to involve themselves with children.

The “Child sexual abuse accommodation syndrome”, proposed by Summit (1983), has been invoked by a number of researchers to explain why children’s disclosures are sometimes problematic or retracted. According to its author, the typical pattern of events is as follows: the

child is forced to keep the sexual abuse a secret and initially feels trapped and helpless. These feelings of helplessness and the child's fear that no one will believe the disclosure of abuse lead to an accommodative behavior. If the child does disclose, failure of family and professionals to protect and support the child adequately, augment the child's distress and may lead to retraction of the disclosure. Disclosure of sexual abuse in children can be purposeful or accidental. Disclosure is often initiated after an enquiry about a physical complaint, for example, pain when washing the genital area or a blood stain in the panties. Child sexual abuse disclosures are usually a process rather than a single event. When children do disclose, it is usually their mother however, the mother may also be the victim of abusive behavior by the same perpetrator. Alternatively, disclosure may be to a close friend, peer or teacher and other members of school etc.

EFFECTS OF CHILDHOOD SEXUAL ABUSE

Childhood sexual abuse has significant negative and pervasive psychological impact on its victims. The majority of sexual abuse happens in childhood, with incest being the most common form (Courtois, 1996, as cited in Maltz, 2002). The impact of childhood sexual abuse varies from person to person and from case to case, while the nature and severity of the sexual act may cause more serious impact, many other factors may influence the degree of damage the victim experiences. Other factors may include the perspective of the individual, the individual's internal resources and the individual's level of support. (Courtois, 1988, as cited in Ratican, 1992). Although all forms of childhood sexual abuse cannot take on many different forms that still exploit the victim sexually and cause harm. The perpetrator may exploit the child by introducing them to pornography prematurely, assaulting them through the internet, or manipulating them into taking pornographic photos. The nature and dynamics of sexual abuse and sexually abusive relationships are often traumatic. When sexual abuse occurs in childhood, it can hinder normal social growth and be a cause of many different psychosocial problems. (Maltz, 2002).

There is a strong, albeit complex relationship between child sexual abuse and adverse mental health consequences for many victims. Negative mental health effects that have been consistently associated with child sexual abuse include post-traumatic symptoms (Canton-Corter & Canton, 2010; O'Leary & Gould, 2009; Ullman, Fllipas, Townsend & Starzynski, 2007), depression (Fergusson et al., 2008; Nelson et al., 2002), substance abuse (Lynskey & Fergusson, 1997; O'Leary & Gould, 2009), helplessness, negative attributions, aggressive behaviors & conduct problems, eating disorders (Jonas et al., 2011) and anxiety (Banyard, Williams & Siegel, 2001; Nelson et al., 2002). More recently child sexual abuse has also been linked to psychotic disorders including schizophrenia and delusional disorder (Bendall, Jackson, Hulbert & McGorry 2011; Lataster et al., 2006; Wurr & Partridge, 1996) as well as personality disorder (Cutajar, 2010b) child

sexual abuse involving penetration has, in particular, been identified as a risk factor for developing psychotic and schizophrenic syndromes (Cutajar et al., 2010a).

Some earlier studies and reviews (Briere & Zaidi, 1989; Fondacaro & Buller, 1995) reported mixed findings, but other factors such as co-existing child physical abuse, family dysfunction, depression, and the consequences of disclosing child sexual abuse were often not considered. Maker, Kemmelmeier & Peterson (2001) highlighted that victims of child sexual abuse are at greater risk of adult sexual assault and that the negative psychological outcomes attributed to child sexual abuse may in fact be more strongly associated with sexual assault in adulthood “as measures of psychological functioning may be more sensitive to the effects of recent sexual trauma than the impact of more distal child abuse”.

A study done on the prevalence and predictors of sexual dysfunction in the United States revealed that victims of sexual abuse experience sexual problems more than the general population. They found that male victims of childhood sexual abuse were more likely to experience erectile dysfunction, premature ejaculation, and low sexual desire, and they found that women were more likely to have arousal disorders (Laumann, Piel & Rosen, 1999). Some research findings suggest that male victims of child sexual abuse may experience different and in some respects, more adverse mental health outcomes than female victims. For example, Hunter (1991) found that male victims were more likely than women to experience anxiety, rumination and worry. Gold et al., (1999) found that relative to their respective normative samples, male survivors drawn from a clinical sample demonstrated greater symptomatology compared to women survivors on measures of interpersonal sensitivity, depression, anxiety and phobic anxiety. Hillberg et al., (2011) concluded that while a series of meta analyses have failed to demonstrate difficulties, there is several empirical evidence of gender differences at least in victims perceived mental health consequences. This finding is consistent with research which suggests that male survivors of child sexual abuse are more susceptible to internalizing effects, while women are more likely to experience externalizing effects (Dorahy & Clearwater, 2012; Romano & De Luca, 2001). The difference may be related to gender norms that make it difficult for men to discuss sexual abuse, and possibly even to a cultural bias that sees women’s, but not men’s promiscuity as an “externalizing” problem.

Research has long indicated a relationship between childhood abuse, including sexual victimization and subsequent alcohol and substance abuse (Muller & Fleming, 1998). Victims of childhood abuse and neglect, generally have been reported to be at greater risk of abusing alcohol and drugs (Min Farkar, Minner & Singer, 2007) and survivors of child sexual abuse are at a heightened risk of developing an alcohol disorder and with an earlier age of onset (Zlonik et al., 2006).

In adolescence, child sexual abuse has been associated with early onset consensual sexual activity, unprotected sexual intercourse, multiple sexual partners and teenage pregnancy (Senn, Carey & Vanable, 2008; Upchurch & Kusunoki, 2004). In adulthood, similar sexual risk behaviors have been documented for survivors of child sexual abuse (Arriola et al., 2005; Cohen et al., 2000; Fergusson, et al., 1997). For example, Wyatt, et al., (1992) found that victims of child sexual abuse were more likely to engage in group sex and partner swapping on a frequent basis and in other types of sexual behaviors that increase the risk of sexually transmitted infections (STI). There is also evidence that gay men and bisexual men who were sexually abused in childhood were more likely to engage in unprotected anal sex than their non-abused counterparts (Jinich et al., 1998, Kalichman, Gore-Felton, Benotsch, Cage & Rompa, 2004). These findings are consistent with other research which suggests that child sexual abuse is associated with later sexual risk behavior in men as well as women (Senn et al., 2008).

Sexualized behaviors include activities such as kissing with one's tongue thrust into the other person's mouth, liking one's own or another person's breasts or genitals, masturbation, and rhythmic pelvic thrusting. Distinguishing inappropriate sexual behaviors is often very difficult from developmentally appropriate, i.e. normal sexual behaviors. There is a growing body of research on sexualized behavior in children and its relationship to sexual abuse. Sexualized behavior in children could be defined as problematic when :

- It occurs at a greater frequency or at a much earlier stage than would be developmentally appropriate (e.g. a 10-year-old boy versus a 2-year-old boy playing with his penis in public, or a 6-year-old girl masturbating repeatedly in school).
- It interferes with the child's development (e.g. a child's learning to use sexual behaviors as a way of engaging with other people).
- It is accompanied by the use of coercion, intimidation or force (e.g. one 4-year-old child forcing another to engage in mutual fondling of the genitals or an imitation of intercourse).
- It is associated with emotional distress (e.g. eating or sleeping disturbances, aggressive or withdrawn behaviors).
- It reoccurs in secrecy after intervention by caregivers.

There are some children who are raised in child abuse, but who manage to do unexpectedly well later in life regarding the preconditions. Such children have been termed dandelion children, as inspired from the way that dandelions seem to prosper irrespective of soil, sun, drought, or rain. Such children are of high interest in finding factors that mitigate the effects of child abuse.

ROLE OF PARENTAL SUPPORT

Parenthood, described by an author as the 'last stand of the amateur' (Koller, 1974, as cited in Warren, 1983a) is the one occupation common to the majority of the adult population for which no training or educational qualification is required. The underlying societal assumption is that child-rearing skills and feeling protective towards children are natural and instinctive (Bowlby, 1971, as cited in Corby, 1993) requiring no additional instruction.

Clearly, most children are well cared for by their parents, although there are periods and occasions in the lives of most parents when extra help and support is needed to assist them to care for their children (Smith, 1997). However, there are some children for whom a parent's 'instinctive' desire to protect is unrealized, or for whom support is not forthcoming; these children become exposed to the risk of child maltreatment (Tomison, 1996c).

Recognizing the extent and the seriousness of the problem of child sexual abuse, parent education is currently advocated as a significant component of any comprehensive set of preventive services for parents at high risk of abusing or neglecting their children (Dubowitz, 1989; Chak & King, 1998). There have been strong calls for programs to educate parents about child sexual abuse (Klein & Hickman, 1986) and substantial efforts have gone into developing such parental education in conjunction with children's programs in the schools (Brassard, Tyler & Kehle, 1983). Because parents are logical ones from whom children may seek help, educating them about abuse issues can be an important part of prevention. David Finkelhor (1986, p.229) identifies the following three advantages of prevention education for parents. First, if parents learn to educate their own children, the repetition of information from a trusted source can be more effective than the isolated classroom experience. Second, if parents learn to recognize the signs, they may more easily identify abuse if it occurs. Third, parents may learn to react in more helpful ways to discovery of abuse. Though the last two advantages are relevant only after abuse has already occurred, they might help prevent recurrence since abuse is frequently not an isolated event. In addition, Finkelhor (1986) speculates that parent education programs might actually reduce the chance that adults will become abusers.

Adams & Fay (1986) also argue for parental involvement, suggesting that one-to-one communication, adjusted to the individual child, can enhance the effectiveness of classroom programs. They also emphasize that parents need the appropriate information so that they can recognize signs of abuse, know how to respond to a child's questions, correct a child's misconceptions, and avoid contradicting accurate information. Certainly, parental education seems to be important if such programs can be conducted in schools on a regular basis to have maximum impact in preventing abuse. One study found that 75% of surveyed parents were positive about their children to attending a play on child sexual abuse, and no parent was negative. The authors of

this study concluded that “There was no evidence from the study to be substantive the fears expressed by school professionals that children and parents would not be receptive to education about preventing abuse of children” (Swan, et al., 1985, p. 404). These authors also cited a study in which 87% of parents questioned supported teaching sexual abuse prevention in the schools (Finkelhor, 1983). Therefore, it does seem likely that parents could be enlisted to support the school programs.

Parent education is generally assumed to benefit the families in two ways: by increasing parents’ knowledge of child development and appropriate methods of child-rearing, problem solving and home management; and by reducing parental stress via the expansion of the social support networks available to parents (De Panfilis 1996; Reppucci, Brinter & Woolard, 1997). Parent education, in the form of family support, is one of the methods used to reduce situational stress by training and educating ‘at risk’ parents on alternative behavioral management techniques and personal coping skills (Altepeter & Walker, 1992). Parents are educated to systematically and consistently implemented techniques which are based on respondent and operant learning principles in managing their children’s behavior. The intention is to provide parents with effective child-rearing and disciplining techniques which are presumed to be more effective than those they employed prior to training. Parents are encouraged to utilize their skills to manage their children’s behavior more effectively, thus minimizing or preventing subsequent behavioral problems (Altepeter & Walker, 1992). Other benefits of such an approach have been an increased sense of parental competence (Blechman, 1984, as cited in Altepeter & Walker, 1992), while the increased use of positive reinforcement of children’s behavior by parents leads to a greater number of positive parent-child interactions in the parent-child relationship (Eyberg & Robinsob, 1982).

If one strategy to enlist parental support is to treat parents as non-abusers, then it must be specified that most abusers aren’t male. The common use of the gender-neutral term “parent” obscures the fact that the majority abusers are male. It would be a dangerous way of denying the reality that it is primarily men in this society who sexually abuse children. Prevention efforts aimed at the female parent, who is probably not the perpetrator are unlikely to succeed. Closer examination revealed that those actually engaging in the sexual activity were the male alone in 81% of the cases, the female alone in 11%, and both in 9% (although in that 9% it was not clear whether the woman actually had sexual contact.) Women were often listed as perpetrators if they “allowed” abuse to occur. Furthermore, mothers may be listed as abusers if they provide “inadequate or inappropriate” supervision and fail to protect their children from sexual activities with others, including “voluntary” activity with other minors (Finkelhor & Hotaling, 1984, p. 28).

There has been a relative lack of emphasis on the role of fathers or other family members, except in the case of sexual abuse (Tomison, 1996a). The majority of studies investigating families, and parenting in general, have focused predominantly on mothers and children as sources

of data. The changes to the role of fathers have been linked with social demographic changes and, in particular, the changes in women's lives (including the restructured labor market and the increasing numbers of young children who have mothers working outside the home), changes in family formation, and debates about equal opportunities for women (Speak, et al., 1997). Such trends have put pressure on fathers to participate in the care of their children regardless of their personal preference.

So, there is a need to develop programs specifically for fathers as a means of increasing their participation in child-rearing. Such programs need to equip fathers with the parenting skills they need, provide them with alternative role models for fatherhood and offer opportunities for peer support, which is often not available for fathers. The programs should also offer men insight into the positive influences they can have on their children's development and the benefits for themselves of spending time caring for, and rearing their children.

CONCLUSIONS

Child Sexual Abuse is a widespread problem with seriously damaging life-long outcomes. In India, the issue of child sexual abuse is still a taboo. Here majority of the people remain silent about the issue. This silence is due to the fear of indignity, denial from the community social stigma and gap in communication between parents and children about this issue. So, parent education is much needed in this context. However, to prevent child sexual abuse, we should follow some prevention tips. These are.

- When children are taught that they are special and have the right to be safe, they are less likely to think abuse is their fault and more likely to report an offender. So, teaching children about their rights is a very important matter.
- Too often, intervention occurs only after abuse is reported. Greater investments are needed in programs that have been proven to stop the abuse before it occurs - such as family counseling and home visits by nurses who provide assistance for newborns and their parents.
- When children are abused, their trust in others are broken. This affects how they form relationships in the future. So, listen to them. It takes courage for a child to tell about abuse. We should reassure them that they are right to tell us.
- Don't ask lots of questions. Let them tell you in their own words at their own pace.
- Make sure the child is safe and let them know you will do your best to stop being harmed.

Lastly, it can be said that the parental education, based on a realistic portrayal of the facts of child sexual abuse, would greatly benefit the children. It is a goal worth pursuing.

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THE EFFECT OF ONLINE CLASSES ON THE LEARNERS' HEALTH AND QUALITY OF LIFE: A SURVEY ON AN INDIAN PERI-URBAN HIGHER EDUCATION INSTITUTION

Aakash Ranjan Das

Research Scholar, Dept. of Sociology, Vidyasagar University, Midnapore, 721 102, India.

Dr. Asmita Bhattacharyya

Assistant Professor, Dept. of Sociology, Vidyasagar University, Midnapore, 721 102, India.

ABSTRACT

The impact of online education on the students' health and quality of life since the start of pandemic is discussed in this paper. The cross-sectional and quantitative type investigation is accomplished in a higher education institution in Paschim Medinipur district of West Bengal, India. Initially, 312 students were selected from 1652 students based on the "Raosoft" scale. But 235 available samples were interviewed by telephone/online from a total of 312 respondents caused by pandemic lockdown and other issues. The empirical survey took place during the time of August 2020 to August 2021. This research investigates the health issues due to regular online classes such as disablement of cognitive functions, eye problems, orthopaedic disorders, insomnia, depression, and anxiety. This study will assist in taking corrective action to secure the future of all these health issues for the students.

Keywords: Online classes, Mental health and physical affliction, Peri-urban region, Higher education Institution

INTRODUCTION

The ongoing COVID-19 pandemic has had a significant impact on all aspects of human life. Studies in the field of mental health and disability have found that, even though the "COVID-19 does not fit into current PTSD (Post-Traumatic Stress Disorder) modalities or diagnostic criteria, new research suggests that traumatic stress symptoms are present as a result of this ongoing global stressor. As a result, it may cause PTSD symptoms" (Brigland et al., 2021).

India is one of the countries that have faced multiple challenges as a result of the pandemic outbreak. The University Grants Commission (U.G.C.) has mandated that colleges and universities conduct teaching and learning virtually, relying on technology (Rana, 2020). Similarly, the Ministry of Higher Education in West Bengal, India, has ordered all academic institutions to close

from March 2020 to July 2020 (Government of W.B., Department of Higher Education, G.O. No: 15-Pr.Secy-HED / 2020), with the deadline being extended. Consequently, despite numerous digital barriers, higher education institutions in West Bengal have begun to offer online courses (Rana, 2020). The gap in knowledge on the relationship between excessive usage of digital screens and health issues among student learners is filled by the present investigation.

DISABLEMENT OF COGNITIVE FUNCTIONS

Cognition is described as “the mental processes involved in acquiring and processing information required for daily living” (Magni & Bilotta, 2016). People with cognitive deficits have poor memory, poor attention, difficulty cognizing information, difficulty recognising people, places, or things, and experience severe mood swings. Such conditions are known as cognitive disorders (Shree & Shukla, 2016).

COMPUTER VISION SYNDROME

Computer vision syndrome is defined by the American Optometric Association as a group of eye and vision problems due to prolonged digital device use. Scholars such as Agarwal et al. (2021) discuss a variety of ocular problems that have been exacerbated during the pandemic, such as irritation leading to tearing, tired eye, burning sensation, headache, blurring vision, redness, as well as double vision.

INSOMNIA

Insomnia is medically described as the presence of an individual's report of difficulty in sleeping (Roth, 2007). Memory, concentration, and performance can all be harmed by sleep deprivation and an irregular sleep cycle. According to Khare (2020), increasing screen time during pandemic harms students' sleep health. Blue light emitted by digital devices has been shown to interfere with the normal functioning of intracellular circadian melatonin release.

DEPRESSION AND ANXIETY

Empirical studies in China (Jiang, 2020), France (Essadek & Rabeyron, 2020) found that a large percentage of students suffer from mental disorders of varying severity. Many students reported depression, anxiety, distress, and even suicidal thoughts (Essadek & Rabeyron, 2020).

SIGNIFICANCE OF THE STUDY

In-depth research has not yet been done in peri-urban areas on the effect of the pandemic “lockdown” measures on physical activity and sedentary behaviour, as well as potential links to the mental health of students pursuing higher education. Therefore, the objective of this study's cross-sectional investigation is to look at changes in students' mental stress, physical activity, and

sedentary behaviour at an Indian peri-urban higher education institution before the government imposed a “lockdown” at the academic institutions. It brings up the goals of our investigation.

OBJECTIVES OF THE STUDY

- i. To identify the effects of online classes on students' health impacting their quality of lives.
- ii. The outcome of this study shall raise the awareness levels among stakeholders about the negative effects of online classes, which shall call for immediate corrective actions.

METHODS OF THE STUDY

The study investigates the foundation of quantitative analysis with cross-sectional data of an online and telephonic survey-based study predominantly during the lockdown times. A higher education institution had been chosen for the study area which is mainly peri-urban based and situated in West Bengal, India. The connotation of picking a peri-urban area for the study is neither rural nor urban in its position and characterize (Prakash, 2012). The survey was executed on the core stakeholder i.e. students. Spotlighting the objectives, a questionnaire was organized for data collection. The data were collected through semi-structured interviews within the time of August 2020 to August 2021. The selected students were 312 for the investigation among a total 1652 number of students from all departments of the Institution using the “Raosoft” scale (95% significant value & 5% error) and disproportionate stratified sampling method. But it was feasible to reach 235 students (130 males and 105 female students) respondents only from 312 due to several barriers like lockdown social distancing norms, lack of infrastructure, least interest to provide answers, digital connectivity issues and so on. Their numerical outcomes were analyzed using SPSS 22 version software (windows 10 os) and compute their descriptive statistics.

DATA ANALYSIS & INTERPRETATION

The study analysis is about the issues related to the Health of the student respondents in below table 1. It shows us very relevant physical and psychological effects of the regular online classes taken by the student respondents during the peak of pandemic times, whether accessing outside resources was restricted or social distancing norms were implemented. Through the interviews of the students, it is disclosed that various physical stresses and optical problems are created due to the regular application of the digital devices for their academic purposes, as if no other options were left. The psychological effects are caused mainly by the isolation. The condemnation of opening institutions and the lack of face-to-face interaction with peers, teachers, and so on generate issues like exhaustion, depression, and anxiety among the students, which show that only online interaction is not beneficial for the students' mental health.

Table 1 displays the quantitative analysis of the study investigation, which discloses that the students have faced neck pain (63.8 percent), followed by headache (57.4 percent), shoulder pain

(53.2 percent), and back pain (46.8 percent). And 72.3 percent of respondents have faced all these problems. The “bad posture” characterized by an excessively bent spine, slouched or slumped back, lunched shoulders, and a weirdly bent arm or wrist is the main cause of this problem (Dhar, 2020). From March 1 to August 31, according to Dhar (2020) of The Times of India, the daily newspaper the online health portal “Practo” saw a 680 percent increase in orthopaedic Tele consultations. In this context, we’d like to mention the Times of India blog post “Why Students are Complaining of Aches and Pain,” which attempts to draw public attention to the orthopaedic problems of Mihika Verma and Krishna Mathur, both 17 years old.

The study finding reveals that a large percentage of the student respondents had faced computer vision syndrome during attending regular online classes such as tiredness of eyes (51.9 percent), Blurring of vision (49.4 percent), Watering of eyes (47.6 percent), Redness/ Dryness of eyes (40.8 percent), Double vision (25.1 percent) and 33.2 percent respondents had faced all above problems. Sawhney et al., (2021) mentioned in their study, an ophthalmologist who talks about the negative effects of blue light in an interview published in The Hindu, a well-known newspaper. Students frequently visited his clinic with concerns of dryness in their eyes and frequent blinking during COVID-19, according to the medical expert. These problems are caused by spending too much time on digital screens. To avoid clinical issues, he recommends that a proper viewing distance be maintained. Another issue associated with online classes is blurred vision, dry eyes, and headaches. Without realising it, students keep their gadgets close to their faces, putting undue strain on the eye muscles and eventually leading to computer vision syndrome.

Our findings support Bhattacharyya et al. (2021) study of digital eye strain in the pandemic. The New Indian Express (2020), a renowned newspaper, published a blog titled “Eye strain from Digital Classes: A Significant Health for Students,” which discusses the ophthalmological issues that students faced during the pandemic. Doctor Sanitha Sathyan, a paediatric ophthalmologist, expressed her concerns in the blog post.

The study investigation showed that massive numbers of respondents had been suffering from psychological anxiety. Exhaustion (80.8 percent), annoyance (68.1 percent), sleeplessness/ insomnia (54.9 percent) and depression (51.1 percent) are major in it. The results are similar to the studies of Essadek & Rabeyron (2020).

To prevent mental health declines, the WHO advised those who live alone to “regularly exercise” (World Health Organization, 2020). In the context of COVID-19, there is a focus on incorporating home-based exercise to prevent a steady decline in mental and physical health (Ravalli & Musumeci, 2020).

Table 1 : Student respondents' health issues due to attending regular online classes

Physical stress during online classes	Frequency (N = 235)	Percentage (%)
Headache	135	57.4
Neck pain	150	63.8
Shoulder pain	125	53.2
Back pain	110	46.8
All above	170	72.3
Not at all	-	-
Any computer vision syndrome during online classes	Frequency (N=235)	Percentage (%)
Tiredness of eyes	122	51.9
Redness/ Dryness of eyes	96	40.8
Watering of eyes	112	47.6
Blurring of vision	116	49.4
Double vision	59	25.1
All above	78	33.2
Not at all	-	-
Experience of psychological anxiety	Frequency (N = 235)	Percentage (%)
Exhaustion	190	80.8
Depression	120	51.1
Annoyance	160	68.1
Sleeplessness/Insomnia	129	54.9
All above	120	51.1
None of these	-	-

Source : Telephonic/online interview from August 2020 to August 2021

CONCLUSION

The study conclusively shows that educational administrators, institutes, and the government must seriously consider the social and medical effects of online education on students' physical and mental health, and recommend appropriate strategies to mitigate these issues. To make online teaching more meaningful, a collaborative approach incorporating teachers, students, and parents

can all be initiated. When online learning is continued for a long time, there is a requirement for an amended standard operating procedure (SOP) to conduct online lectures, the multilingual feature needs to be added while installing and using software/s in virtual applications software/s, like Google-meet, MS teams etc. Additionally, specific strategies for students with cognitive problems and other disabilities must be developed. To ensure that students do not spend the majority of their quality time in front of their screens, course design, online presentation, and the quantity and quality of the information provided must be restructured. The elevated workload of the academic curriculum should be avoided, and students should be encouraged to participate in extracurricular activities. To the extent possible, more emphasis should be placed on group activities and group learning to ensure that students do not feel isolated. As per the suggestion of the World Health Organization practicing regular exercise brings a positive impact on their mental as well as physical health. Parents should also be made aware of the infrastructure and study postures that must be maintained while attending online classes.

The study was planned in a peri-urban area with only institutions participating. Planning a study to collect data that will yield a more significant and varied sample and will include higher education institutions is possible. Due to the lockdown and social distance norms, an interview was conducted over the phone or online, where the respondents' body language was not apparent and there was not enough time to give them follow-up questions about the interview issues. Future studies could work to go around all of these obstacles, deepen our understanding of how to overcome interviewing challenges, and propose feasible solutions that will benefit students by offering options for more students from different diasporas.

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ROLE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT TO ACHIEVE SUSTAINABLE FUTURE

Nasim Mondal

Research Scholar, Swami Vivekananda Centre for Multidisciplinary Research in Educational Studies, Ramakrishna Mission Sikshanamandira, University of Calcutta, India.

Dr. Satyajit Kar

Associate professor, Swami Vivekananda Centre for Multidisciplinary Research in Educational Studies, Ramakrishna Mission Sikshanamandira, University of Calcutta, India.

ABSTRACT

Education for Sustainable Development (ESD) empowers young people to be the agents of change for sustainable development by providing them with opportunities for learning and civic engagement, as well as the competencies and tools to participate in ESD as co-creators of individual and societal transformation. ESD aims to develop competencies that enable individuals to reflect on their actions, considering their current and future social, cultural, economic, and environmental consequences on a local and global scale. The ESD aimed to achieve the main goals of fostering environmental values, curriculum, textbooks, and pedagogical approaches in the school community, as well as raising awareness about the importance of environmental preservation and conservation. The objective of the study is to foster environmental awareness by Integrating Education for Sustainable Development in curriculum, Pedagogical approaches, teachers' perceptions, and teaching practices. The methodology for the study is descriptive documentary analysis with a qualitative approach. Through Education for Sustainable Development, there is a continued emphasis on learning about climate and other environmental issues, rather than developing the socio-emotional and action competencies essential to environmental and climate action. Transformative learning for people and the environment is critical to our survival and that of future generations. For a more sustainable future, governments, education policymakers, academics, and education and environmental stakeholders must increase their commitment to Education for Sustainable Development.

Keywords: Education for Sustainable Development, Sustainable Development Goals, Environmental sustainability, Sustainable future.

INTRODUCTION

In the last decade of the twentieth century, the concept of “education for sustainable development” first appeared in UN documents. The evolution of the ESD concept is inextricably

linked to the implementation of the major political documents adopted by the international community at the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. At this summit, it was stressed that education is a critical factor in achieving sustainable development. The world leaders then declared that “education is a decisive factor of change,” implying changes towards a better, more sustainable, and secure future. The World Summit on Sustainable Development, held in Johannesburg in September 2002, also proposed that one of the main priorities be education for sustainable development of the world community’s activity. The United Nations announced the UN Decade of Education for Sustainable Development, a highly regarded and supported initiative (2005-2014). In 2015, 193 countries met in New York to adopt the 17 Sustainable Development Goals (SDGs) drafted by the United Nations General Assembly and set to be completed by 2030. These objectives address all three of the previously mentioned dimensions of sustainability (Saner et al., 2019). All international reports and conferences aimed to ensure education for sustainable development by enabling learners to acquire the necessary techniques, skills, values, and knowledge, as well as education that has a return, whether for humans or societies and includes a lifelong learning perspective (Leicht, Heiss & Byun, 2018). The 2030 Agenda for Sustainable Development prioritises lifelong learning opportunities for all. The new targets build on their predecessors, the MDGs, by broadening and deepening the scope of system-wide quality education systems. Unlike the Millennium Development Goals, which focused on universal primary education, the Sustainable Development Goals incorporate tertiary education into the global development agenda.

ESD aims to develop competencies that enable individuals to reflect on their actions, considering their current and future social, cultural, economic, and environmental consequences on a local and global scale. Individuals should also be empowered to act in complex situations in a sustainable way, which may necessitate taking risks; and to participate in socio-political processes that move their societies towards sustainable development. It has an impact on an individual’s ability to develop their potential and encourage processes that promote peace and recognise the importance of sustainable development. As a result, the United Nations considers education to be its top priority (United Nations, 2017).

ESD entails more than just an understanding of social, environmental, and economic issues. It also includes values, problem-solving abilities, critical thinking abilities, and local and global perspectives on issues. Furthermore, ESD emphasises the importance of democracy and people’s participation in democratic societies. Because sustainable development involves contentious issues and complex systems, teachers must be well-equipped with the qualifications required for effective ESD implementation (Bertschy, Künzli, & Lehmann, 2013). The work of UNESCO on ESD is divided into five main areas: advancing policy, transforming learning environments, building educator capacities, empowering, and mobilising youth, and accelerating local-level action.

ESD can develop cross-cutting key competencies for sustainability that are relevant to all SDGs. ESD can also develop specific learning outcomes needed to work on achieving a particular SDG. Education for Sustainable Development means including key sustainable development issues in teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption.

REVIEW OF RELATED LITERATURE

Soler (2022) research focuses on a correlation analysis of education for sustainable development in both pre-and post-COVID scenarios. The findings indicated a more significant concern for sustainability. The author concluded that students in confinement are more sensitive to sustainable development. The study findings also revealed a decrease rate of interest in participating in environmental projects, possibly due to apprehension about travelling abroad in complete confinement.

Corpuz et al. (2022) examine the incorporation of environmental education (EE) in teacher education programmes: towards sustainable curriculum greening. Environmental education (EE) is critical in dealing with global environmental issues. The integration of EE in Teacher Education Programs (TEPs) in Region III, Philippines, was assessed using a mixed-method study. The findings indicate that incorporating EE into curricular programmes helps to promote environmental knowledge, skills, and attitudes among students, but involving other stakeholders, particularly the family and the community, is also required to ensure application beyond school or classrooms.

Ammonite & Turek (2022) investigate Pre-Service Geography Professional Competencies of Teachers in Education for Sustainable Development. The study plan is positively related to the self-assessed ESD competencies. Pre-service teachers consistently place a high value on ESD competence, regardless of semester number or modules completed. Their findings show that active learning environments in a disciplinary setting have a greater impact on competence assessment than formally integrating ESD into the curriculum. Pre-service geography teachers place a high value on ESD competence.

Kang (2021) investigation on “Predicting Pre-service Teachers’ Intention to Implement Education for Sustainable Development: A Fuzzy-Set Qualitative Comparative Analysis” suggested the ways to strengthen ESD implementation by identifying the factors influencing pre-service teachers’ intention to implement ESD. To that end, the author concentrated on identifying the various conditions that predict Korean pre-service teachers’ intention to implement education for sustainable development.

Nasibulina (2015) conducts research on Education for Sustainable Development and Environmental Ethics. The article examines the current state of education for long-term

development. ESD is viewed as a method of forming new consciousness and behaviour that should be used to adjust human development courses. Environmental ethics plays a positive role in the creation and development of ESD.

Anyolo & Keinonen (2018) Investigate Education for Sustainable Development in Namibia: School Teachers' Perceptions and Teaching Practices. The study attempted to investigate Namibian teachers' perceptions of ESD implementation and teaching practices. The study also found that teachers are enthusiastic about incorporating ESD into the senior secondary school curriculum. Following that, they proposed that ESD can be implemented as a separate subject or integrated with other existing subjects as multi-disciplinary subjects.

OBJECTIVE OF THE STUDY

- To foster environmental values in institutions and community.
- To integrate Education for Sustainable Development in curriculum and Pedagogical approaches.
- To assess Education for Sustainable Development learning outcomes and the quality of Education for Sustainable Development programmes.
- To implement teachers' perceptions and teaching practices on Education for Sustainable Development.

METHODOLOGY

The methodology of the study is descriptive and analytical. The study is conducted through documentary analysis with a qualitative approach. The required information is collected from different primary and secondary sources like books, UNESCO reports, research articles, university magazines and different websites.

DISCUSSION

Education for Sustainable Development (ESD) is crucial for achieving a sustainable future. ESD aims to equip individuals with the knowledge, skills, values, and attitudes needed to create a sustainable world. Here are some key roles of education in achieving sustainable development:

Raising awareness : Education is essential in raising awareness about the interconnectedness of economic, social, and environmental issues. Through education, people can understand the impact of their actions on the environment and the consequences of unsustainable practices. ESD also helps to create awareness of the Sustainable Development Goals (SDGs) and their relevance to local and global challenges.

Fostering critical thinking and problem-solving: ESD helps to develop critical thinking skills that enable individuals to analyse complex issues and come up with innovative solutions. It

encourages learners to think beyond conventional approaches and consider multiple perspectives. This approach fosters creativity, collaboration, and problem-solving skills.

Promoting sustainable lifestyles: Education plays a vital role in promoting sustainable lifestyles by providing individuals with the knowledge and skills needed to adopt sustainable practices. ESD encourages individuals to make conscious choices that reduce their environmental impact, such as using public transport, reducing energy consumption, and recycling.

Building sustainable communities: Education is a critical tool for building sustainable communities. ESD helps to develop a sense of responsibility, social cohesion, and collective action. It encourages individuals to work together towards common goals, such as promoting renewable energy, reducing waste, and protecting natural resources.

Empowering individuals and communities: ESD empower individuals and communities to participate in decision-making processes that affect their lives. It promotes inclusive and participatory approaches that value the contributions of all stakeholders. Through education, individuals can acquire the knowledge and skills needed to engage in sustainable development.

Quality Education: Sustainable development ensures inclusive and equitable quality education and promote opportunities for lifelong learning for all. It helps to develop partnerships between schools, universities and other institutions offering education in different regions of the world. The importance of inclusive and equitable quality education and lifelong learning opportunities for all (formal, non-formal, and informal learning, including ICT use) at all levels is needed for improving people's lives and sustainable development.

Sustainability in the curriculum: ESD may be relevant to each disciplinary area and might be used and adapted as 'entry points' to develop sustainability education further. There are three types of sustainability in the curriculum: Environmental sustainability, Economic sustainability, and social sustainability.

- ***Environmental sustainability:*** Natural resources management, Food and farming Ecological systems, Waste/water/energy, Biodiversity, Climate change.
- ***Economic sustainability:*** Alternative futures, Leadership, and change, Learning organisations, Corporate Social Responsibility, Consumerism and trade, Globalisation of economy, Accountability and ethics, Sustainable and ethical tourism,
- ***Social sustainability:*** Sustainable communities, Intercultural understanding, Sustainability in the built environment, Peace and security, Human rights and needs, and Cultural diversity.

Pedagogical approaches in ESD: While there is no 'correct' pedagogy for sustainability education, there is widespread agreement that it necessitates a shift towards active, participatory, and experiential learning methods that engage learners and make a real difference in their understanding, thinking, and ability to act.

1. **Critical reflection**—which includes traditional lectures as well as newer approaches such as reflexive accounts, learning journals, and discussion groups.
2. **Systemic thinking and analysis**—utilising real-world case studies and critical incidents, project-based learning, stimulus activities, and the campus as a learning resource.
3. **Participatory learning**—focuses on group or peer learning, dialogue development, experiential learning, action research/learning to act, and case studies with local community groups and businesses.
4. **Imagining future scenarios creatively**—through role-playing, real-world enquiry, future visioning, problem-based learning, and allowing for emergence.
5. **Collaborative learning**—including guest speaker contributions, work-based learning, interdisciplinary/ multidisciplinary collaboration, and collaborative learning and co-inquiry.

Action-oriented transformative pedagogy: ESD aims to empower and motivate learners to become active citizens capable of critical thinking and capable of shaping a sustainable future. Learner-centred, action-oriented, and transformative pedagogical approaches are appropriate for this goal. The pedagogical approaches represent the general character or guiding principles of designing learning processes in ESD; specific methods following these principles are required to facilitate learning. Methods that promote competencies through active learning are preferred in ESD. Certain methods are especially suitable for ESD. These participatory teaching and learning methods empower students to act for long-term development. When selecting teaching and learning methods for a specific setting, they must meet the needs of the learner group (e.g., based on age, prior knowledge, interests, and abilities); the context in which the learning takes place (e.g., space in the curriculum, pedagogical climate, cultural traditions); and the resources and support available (e.g., teacher competencies, teaching materials, technology, money). Transformative learning for people and the environment is critical to our survival and that of future generations.

Implementing Education for Sustainable Development : Teachers' Perceptions and Teaching Practices

- Even though teachers emphasised that students had difficulty in conceptualising sustainable development and its sub-components, they also emphasised that there were topic and subject-specific teaching strategies that aided students' learning. Ecological footprint activities, for example, help to raise awareness about equal and fair consumption.
- Although these strategies were proposed in the context of ESD, they did not guarantee students' learning because they require students' active participation. As a result, teachers should encourage their students to participate actively and improve their performance in these activities.

- An individual's perception and attitude towards SD can be developed through the cognitive and affective domains of learning, with the cognitive domain determining perception and the affective domain determining attitude. Teachers should encourage their students through the cognitive and affective domains of learning.

Education for Sustainability in higher education : ESD has advanced well in higher education institutions, as students have been exposed to this topic through a variety of programmes. Sustainable development is a key component of the Higher Education Blueprint (Sivapalan, 2016), in which every higher education institution takes the initiative to create a more sustainable campus and, most importantly, introduces ESD to undergraduates. Through cross-curricular activities and special programmes, the educational sustainability approach is commonly delivered as part of specific subjects such as Geography and Science (John, 2012).

Learning outcomes in ESD and the quality of ESD programmes

1. In terms of sustainable development, education is a critical tool for achieving sustainability. For more than a half-century, the international community has recognised education as a basic human right.
2. ESD education is a learning process or teaching approach based on the principles that underpin sustainability at all levels and multidisciplinary areas of knowledge (UNESCO, 2009). ESD subject content typically focuses on complex and value-laden interrelationships between environmental, economic, and social factors, and the included terms are open to various interpretations. The first distinction is between “sustainable development” as a process and “sustainability” as a goal (Stephen & Scott, 2003).
3. ESD is divided into two types of ability: cognitive ability and affective ability, which include investigation and research, lateral, analytical, and creative thought, collaboration, communication, literacy, and observations.
4. ESD implemented in a structured programme has a positive impact on sustainability practice (Hanifah, Yazid, Mohmadisa, and Nasir, 2016).
5. Furthermore, Joshi (2009) recognizes the positive impact of ESD in terms of improved values, behavior, and ways of life, as well as increased concern for social change and a sustainable future.
6. The sustainability approach in education has also been discussed at the international level to raise public awareness of the importance of environmental stewardship in addressing current global issues such as climate change, and education is sometimes both part of the problem and the solution (Huckle & Sterling, 1996).

Sustainable Development Education Panel Report, 1998

ESD is concerned with the learning required to maintain and improve our quality of life as well as the quality of life of future generations. ESD enables people to develop the knowledge, values, and skills necessary to participate in decisions about how we do things individually and collectively, both locally and globally, to improve the quality of life now while minimizing future environmental damage.

UNESCO commits to the following within their respective mandates and areas of responsibility, taking into account their needs, capacities, available resources, and national priorities:

- a. Ensure that ESD is a foundational component of our education systems at all levels, with environmental and climate action as a core curriculum component, while maintaining a holistic perspective on ESD that recognizes the interconnectedness of all aspects of education for sustainable development.
- b. Incorporate ESD into all levels of education and training, from early childhood to tertiary and adult education, as well as non-formal education and informal learning, so that all individuals have lifelong and life-wide learning opportunities for sustainable development.
- c. Implement ESD with a joint emphasis on cognitive skills, social and emotional learning, and action competencies in Education for Sustainable Development of individual and societal transformation, promoting individual behavioral change for sustainable development, equality, and respect for human rights, as well as fundamentally structural and cultural changes at the systemic level of economies and societies, and also promoting the required political act.
- d. Recognize climate change as a priority area of ESD, especially for Small Island Developing States (SIDS), which require special attention in terms of ESD implementation due to their increasing vulnerability to climate change and natural hazards.
- e. Recognize teachers' critical role in promoting ESD and invest in the capacity development of teachers and other education personnel at all levels to ensure a whole-of-sector approach to the necessary educational transformation.
- f. To achieve a more profound and holistic understanding of sustainability challenges and potential solutions, emphasize gender equality and non-discrimination in access to knowledge and skills, and ensure gender mainstreaming in ESD.
- g. Monitor ESD progress in the context of overall SDG monitoring and, to ensure that implementation is constantly improved and that no one is left behind, put in place ESD assessment systems, and improve research on how to evaluate ESD progress.

SUGGESTIONS

- National curriculum frameworks have substantially more references to environment-related topics than education sector plans.
- Implementing learning for the Sustainable Development Goals through Education for Sustainable Development.
- There is considerable regional variation regarding the relative extent of inclusion of environment-related content in policy and curriculum documents.
- There is a continued focus on learning about climate and other environmental issues, as opposed to also developing the socio-emotional and action competencies central to environmental and climate action.
- Delivering Education for Sustainable Development in the classroom and other learning settings.
- Integrating Education for Sustainable Development in policies, strategies, and programmes.
- Continued support from authorities, responsible action by individuals and community, and above all a deep compassion for our planet will together serve to reduce the global environmental crises.

CONCLUSION

Education for sustainable development is a lifelong process that extends far beyond the boundaries of formal education and creates conditions for the development of environmental consciousness and the formation of ecological culture. One of the primary goals of ESD is to foster an ecological worldview. The system of education for sustainable development must perform new functions, such as anticipating and forecasting the sustainable future and developing a personality type capable of implementing the concept of sustainable development. Let us work together to ensure that learners everywhere are change-makers who learn and act for our planet. Education for Sustainable Development has the potential to alter our future. Continued government support, appropriate policies and laws, and responsible behaviour by individuals & communities and above all a deep compassion for our planet will together serve to alleviate the global environmental crises we face today. Education for sustainable development is essential for achieving a sustainable future. It provides individuals with the knowledge, skills, values, and attitudes needed to create a more sustainable world. Through ESD, individuals can develop critical thinking and problem-solving skills, promote sustainable lifestyles, build sustainable communities, and empower themselves and their communities to participate in decision-making processes that affect their lives.

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**A STUDY ON THE ATTITUDE OF UNDERGRADUATE STUDENTS
TOWARDS DISTANCE EDUCATION IN NORTH 24 PARGANAS
DISTRICT OF WEST BENGAL**

Moumita Das

State Aided College Teacher (SACT), Department of Education

Hiralal Mazumdar Memorial College for Women,

Dakshineswar, Kolkata-700 035

ABSTRACT

Distance education is the alternative way to formal education. This is a form of non-formal education. Distance education is the most suitable and dependable way out for the academic achievement of students who are unable to attend regular formal education for some reasons. In this Distance learning method, the most beneficiary or most involved community is the student. In this Distance learning system, the traditional way was correspondence learning but now-a-days it usually involves online education. There will be some possibilities to run the programme completely in distance mode by only online teaching-learning process or a combination of distance learning and traditional classroom instruction which is now called blended mode. In this Distance learning mode, e-learning, virtual classroom, G -Suit are the most common terms which include the online teaching-learning process as well. Distance learning can expand the scope of learning and access of knowledge depending on the need and capability. Distance education also provides some broader methods of communication with the help of technological tools and techniques; communication improves the quality of teaching as communication allows enhancing the benefit of this teaching-learning process. So, it is highly pertinent to know the attitude of the students. Accordingly, an attempt has been made to estimate the attitude of Under Graduate level students towards distance education in North 24 Parganas District of West Bengal.

Keyword: Non-Formal Education, Distance Education, Attitude, Under Graduate Student

INTRODUCTION

Since the last century, our society has changed significantly and so is the education system. Population explosion and restricted opportunities of conventional or face to face mode of education has compelled us to introduce various new forms of education system. One among those education systems is distance education.

In modern times, there are various types of education - informal, formal, and non-formal education. Informal education is actually incidental education without reading, or attending classes. This system of education first evolved in our society. Formal education is learning within an organized institution, with time schedules, established, curricula and syllabi taught by the teacher and learned by the learner, followed by a system of examination or evaluation. Non-formal education is a system of learners' education organized outside the formal system, with emphasis on its organized character, and its hours of learning being flexible.

Education has to be made accessible to all, irrespective of financial, social, and psychological conditions. Lifelong education has also been emphasized not only for all but also for all stages of their lives. This equalization of educational opportunities should be ensured through diversified sources and multi-point entries and democracy can transcend the entire educational system throughout the world.

Distance Education practically took roots in the seventies when more and more and more universities started institutes which offer correspondence courses. Rudder Duthie (1989) has rightly observed that so far as the demand for higher education is concerned, the formal system is unable to meet it. That is why, a large number of students take to distance education or private appearance.

OBJECTIVES OF THE STUDY

- 1) To compare the attitude between Male UG level students and Female UG level students towards education.
- 2) To compare the attitude between UG level students at Urban area and UG level students of Rural area towards distance education.

HYPOTHESES

Ho 1 : There is no significant difference between the attitude of Male and Female UG level students towards distance education.

Ho 2 : There is no significant difference between the attitude of Rural and Urban UG levels students towards distance education.

KEY TERMS DEFINED

In the research problem there are three key terms used.

- 1) **Attitude :** Allport (1935) defined an attitude as “a mental and neural state of readiness, organized through experience, exerting an individual's response to all objects and situations with which it is related”. In psychology, an attitude refers to a set of emotions, beliefs, and

behavior toward a particular object, person, thing, or event. Attitudes are the result of experience or upbringing, and they can have a powerful influence over behavior.

- 2) **Under Graduate Student:** In India, the Graduation system is classified into two parts. Undergraduation (UG) and post-graduation (PG). It takes three or four years to complete an “undergraduates” degree. Undergraduate-level students mean those who are having their university degree course after the 12th class or higher secondary. Under graduation, education is education conducted after secondary education and before post-graduate education. It typically includes all the academic programs up to the level of a bachelor’s Degree.
- 3) **Distance Education:** Distance Education or long-distance learning is the education of students who may not always be physically presented as a school traditionally, this usually involved correspondence covers where the students correspond with the school via post. Today it involves online education. Distance education is defined as the practice of using correspondence, either written or virtual, to lessen.

SIGNIFICANCE OF THE STUDY

In this study the topic is justified on the following things:

- 1) The main goal of Distance education is to overcome barriers of place and time.
- 2) Undergraduate level students are well-known for distance education. So, the study reflects the attitude toward distance education.
- 3) Distance education has many forms, and students accepted them thoroughly. So, nowadays distance education is very much famous.
- 4) Distance education has many advantages so maximum undergraduate-level students has positive attitudes toward distance education.

REVIEW OF RELATED LITERATURE

Pougat & Pym (2000) stated that distance-education programs are the future of higher education. This has led to considerable debate, both for and against. Some argue that it is not worth spending huge amounts of money on infrastructure, software, training, and technological pedagogy. While reviewing the literature, we find three basic issues: for or against qualitative research, the ‘no significant difference’ debate, and criticisms of serious flaws in research design. It is concluded that more qualitative approaches are necessary and that the object of research should be not just the various media involved in ODL, but specific social sets of goals, tasks, and strategies.

Simpson (2004) reported that Distance learning can be defined as learning services. Various problems and constraints are faced in distance learning. Distance education is about information

technology that supports the learning process. Some students can't continue their studies for workload or workforce so online courses are key for keeping studying. There is much evidence that retention in distance education programs is lower than in conventional or face-to-face programs. Distance learners have unique and particular needs that require institutions to promote engagement through a range of targeted services.

Ashok (2007) stated that New Delhi distance education system by the distance teaching institutions of particular. This paper also promotes a discussion on issues that will allow us to reach shared views about what should be the future of research in India. The main objective is to review the state of the art of research in distance education. The paper discusses the institutional policy, global and national distance education research scenario, research designs, and methodology used in open and distance learning (ODL) research. The paper also seeks to promote a discussion on issues, which will allow us to reach shared views about what should be the future of research in Indian DTIs during the decades to come.

Zawacki, Backer & Vogt (2008) stated that presents a review of distance education literature to identify gaps and priority areas in distance education research passed on a validated classification of research areas. The conclusion is that distance education research is strongly dominated by issues related to instructional design and individual learning process.

According to Keles & Ozel (2010), in recent years, rapid developments in technology and the web have led to many changes in education. One of the most important changes in education is in the form of distance learning. In the distance education system developed within the scope of the study, it is ensured that the compilation of programming assignments can be easily integrated into the Moodle distance education system. Thus, the programming assignments will be collected in one place, compiled and run, and scored in the same place.

Simonson, Schlosser & Orellana (2011) stated that Distance education is defined as the various approaches for effective research is summarized, and the results of major research reviews of the field are explained in this article. Additionally, two major areas of research are included-research summaries that explained and support best practices in the field.

According to Kashap & Guruprasad (2014), distance learning will thrush people in high educational environments to share their knowledge and ideas and upgrade their qualifications for using of information communication technology (ICT) in distance learning. It also added a new dimension to improve the quality and timely information to the students. In India, nowadays, distance education is a popular tool for people who want to acquire knowledge and upgrade qualifications. We analyze the learning methodology, process, and system.

According to Ashwini & Arabis (2018), E-learning is one of the important aspects of today's world. E-learning is very easily accusable and flexible. Distance education supports the

professional development of participation in an institutional observation. E-learning is an excellent option in education, particularly when there are hindrances to traditional learning situations. For example, some people wish to continue their educations but do not live within driving distance of a college or university and don't find it feasible to relocate. E-learning provides a better learning environment in India.

Methodology of the Study

- 1. Method:** The study follows the descriptive study of survey design using hypothesis. This implies quantitative research where data is collected by the administration of the Questionnaire in number and interval level of assessment.
- 2. Data Collection Tool:** In this study a self-constructed Questionnaire comprising twenty (20) statements. This tool is based on 5 points Likert-type scale and the highest possible score would be 100 (5 x 20). Thus scale is constructed followed by 5 points Likert-type scale.
- 3. Variables:** In the present study, dependable variable is Attitude towards distance education. In the present study, independent variable are -Gender (male and Female), Area (Urban and Rural)
- 4. Sampling:** At the present study, the population includes (Male and Female) both students of the undergraduate level of West Bengal (urban and rural areas). Here purposive sampling technique which is basically based on the characteristic of the population and the objectives of the study has been adopted. There are 200 students from two different colleges - among them both urban and rural area students are taken as samples. Between 100 urban area students there are 50 male and 50 female students and between 100 rural area students there are 50 male and 50 female students.

Table -1: Sample Distribution Table

Area	No. of the male student	No. of female students	Total
Urban	50	50	100
Rural	50	50	100
Total	100	100	200

Data Analysis

The collected data are edited, coded, classified, and tabulated. After tabulation, the data is analyzed by using a statistical package for attitude toward distance education of undergraduate-level students. The data is presented using description to find out the significant difference in attitude towards distance education.

Description and Interpretation

A measure of central tendency is a single value that attempts, to describe a set of data by identifying the central position within that set of data. As such, a measure of central tendency is sometimes called a measure of central location. They are also closed as summary statistics. The mean, and mode is all valid central tendency. By using mean, median, and mode- the normally of the collecting data has been shown. Also, Descriptive statistics are used to show whether there is an area-wise difference among secondary students. Here, the attitude on inclusive teacher's programs between Rural and urban areas is investing by using t-test.

At the 5% level of significance and degree of freedom 28, t value is 21.71. If calculating t value is < 21.71 than Null Hypothesis is accepted.

At 1% level of significance and degree of freedom 28, t value is 1.70. If calculating t – value is > 1.70 then Null Hypothesis is rejected.

Table-2: Calculating table for central tendency of attitude score of teachers on Male & Female

N-100	Central Tendency	Value
Mean (x)	66	
Median (me)	64.5	
Mode (mo)	61.5	

From the above table, it is clear that the Mean, Median, and Mode are near, equal. Therefore, the distribution of scores of Secondary school students of Male and Female teachers are normally Distributed.

Score	F
30-39	10
40-49	20
50-59	40
60-69	60
70-79	30
0-79	30
90-99	10

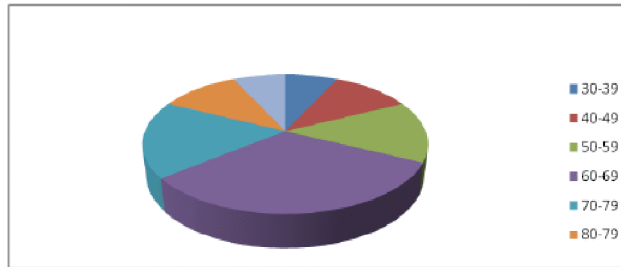


Fig. 1: Pie chart of central tendency of attitude score of Students (Male & Female)

Table-3: Calculating table for central tendency of attitude score of Students of Rural and Urban Area. SSSS

N-100	Central Tendency	Value
Mean (x)	63	
Median (me)	62.83	
Mode (mo)	62.49	

From the above table, it is clear that the Mean, Median, and Mode are near, equal. Therefore, the distribution of scores of Secondary school teachers by Rural and Urban teachers is normally distributed.

Score	F
30-39	10
40-49	30
50-59	40
60-69	60
70-79	30
80-79	20
90-99	10

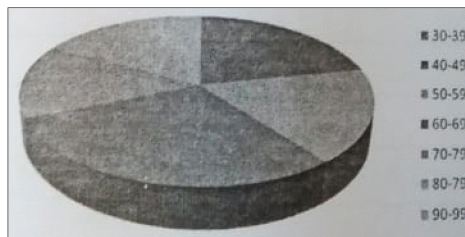
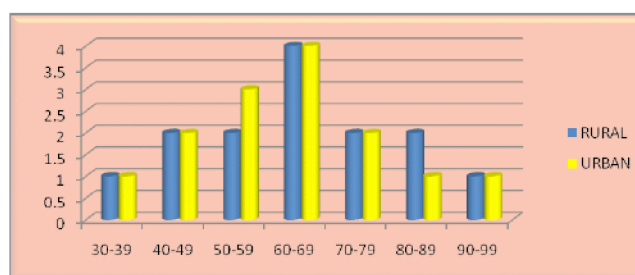


Fig. 2 (Pie chart of tendency of attitude score of students of Rural and Urban area)

Table-4: Calculating table for the t test area with respect to Area basis (Rural & Urban)

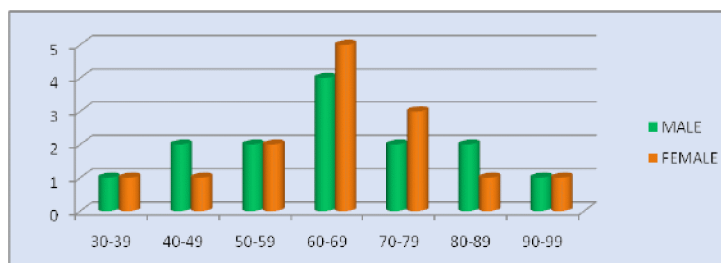
Area	X(Mean)	N	Level of significance (0.05)	Level of significance (0.01)	Calculated value For z test
Rural	64	100	1.960	2.576	4.76
Urban	62	100			

The table shows that the calculated value of t is 4.76 again the critical or table value of z from the table is 1.96 at the 5% level of significance. So the calculating value is greater than of table value t ($4.76 > 1.96$) at 5% level of significance which means Null Hypothesis is not accepted.

**Fig.3 (Bar graph of t-test area with respect to Area basis (Rural & Urban))****Table-5: Calculating table for the t-test area with respect to gender basis (Male & Female)**

Area	X(Mean)	N	Level of significance (0.05)	Level of significance (0.01)	Calculated value For z test
MALE	65	100	1.960	2.576	7.14
FEMALE	63	100			

The table shows that the calculation value of Z is 7.14 again the critical or table value of Z from the table is 1.96 at the 5% level of significance. So the calculating value is greater than table value t ($7.14 > 1.96$) at 5% level of significance which means the Null Hypothesis is not Accepted.

**Fig.3 (Bar graph of t-test area with respect to Area basis Male & Female)**

Findings of the Study

- O1. To compare the attitude between male undergraduate and female undergraduate level students towards distance education.
- Ho 1. There is no significant difference between the attitude of male and female UG level students towards distance education.

The calculated z value 7.14. So that .05 and .001 at the critical value hypothesis are not accepted. Thus, there is a significant difference in attitude toward distance education among male and female students. There existed a significant difference in the attitude of male undergraduate level students and female undergraduate level students towards distance education. The female undergraduate students showed a more positive attitude than male undergraduate level students towards distance education.

- O2. To compare the attitude between urban area undergraduate level students and rural area undergraduate level students towards distance education
- Ho 2. There is no significant difference between the attitude of Rural and Urban UG levels students toward distance education.

On the basis of analysis and interpretation of data, the following findings were drawn-

- 1) The calculated z value 4.76. So that .05 and .001 at the critical value hypothesis is not accepted. Thus, there is a significant difference in their attitude toward distance education among urban and rural area students.
- 2) There existed a significant difference in the attitude of the urban area undergraduate level students and rural area undergraduate level students towards distance education. The rural undergraduate students showed a more positive attitude than urban undergraduate level students towards distance education.

Based on the analysis and interpretation of data the following findings were drawn.

The area-wise difference between Rural and Urban among the undergraduate level students the attitude towards distance education is normal. In the area-wise difference between Male and females among the undergraduate level students the distribution of the attitude toward distance education is normal.

CONCLUSION

In this study after the data interpretation, we can say that the attitude of UG level students towards distance education varies with their gender and residential area. Firstly, the undergraduate students from both the rural and urban area do not have the same attitude toward distance education.

Secondly, both male and female undergraduate college students do not cherish the same attitude on distance education. Attitude toward distance education among the students at a higher level must be positive. They should popularize distance education and make open and distance education (ODL) effective in the 21st century. Moreover, teachers' attitudes towards distance education should also be ensured through further research.

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BREAKING THE BOUNDARIES : SAVITRIBAI PHULE AS FIERCE FEMINIST AND EDUCATIONIST IN INDIA

Miltan Biswas

Assistant Professor, Ramakrishna Mission Brahmananda College of Education, Rahara,
Kolkata-700 118, West Bengal, India.

ABSTRACT

There is abundant evidence that men have been considered superior to women since the dawn of civilization (Scott, 1983). Almost every progressive country has a long history of maltreatment to women. It was women who eventually became rebel to revive social status and strengthen their current position in the world. Women have raised their voices for gender equality and continue to strive hard to empower themselves to achieve that equality, despite widespread mistreatment. At that time, it was essential for our society to achieve women's empowerment and gender equality. During those tough times, Savitribai Phule strongly advocated for the advancement of women's education and emphasized woman's empowerment. Education not only develops an individual's personality but also brings him out of the deep vortex of old and orthodox beliefs into the light. Education has done the same in the context of women. It does not only liberate them from the shackles of old stereotypes but also provides them manifold opportunities. Savitribai Phule was a personality who took a vow to educate girls despite society's opposition to girls' education. She was India's first female teacher who not only fought for women's education, but also established a girls' school for the first time. This paper aims to address how Sabitribai Phule as a social reformer and educationist has transformed the educational scenario in India.

Keywords: Women Empowerment, Woman Education, Gender Inequality

INTRODUCTION

From times immemorial gender inequality persists in the entire society and this conception on gender has greatly influenced the entire education system in India. Gender inequality or discrimination can be defined as *the social phenomenon in which people (both men and women) are not treated equally on the basis of gender*. This gender inequality is experienced distinctively across societies.

From birth males and females are raised differently and they experience various situations for the duration of their lives. From the viewpoint of society, gender has a crucial role to carry out in

many significant achievements or attributes throughout everyday life. All through life, males and females are viewed as two altogether different species who have totally different characters and should remain on isolated paths.

GENDER PAY DIFFERENCES IN RECENT DAY

Throughout the world, the issues of gender discrimination are so intense that it is even found in the workplace. Even in some of the fields, women are not given access intentionally since they are thought to be less productive than men. Even, till date, they are not paid same remuneration for same work and they are discriminated widely across nations. The report by Statista Research Department (2023) proved that the gender pay gap is highest in the country like Korea Republic (31.06%) whereas the lowest can be found in Belgium (1.17%). The situation is worst in Indian context also. Though the average pay gap is reducing day by day, the disparities is still prevalent. The earning of Indian women, on an average, 48% less compared to their male counterparts in 1993-94. Though the gap declined significantly to 28% in 2018-19 as in the labour force survey data of the National Sample Survey Office (NSSO), the pandemic degraded the whole situation. The Periodic Labour Force Survey (PLFS) 2020-21 exhibits an increase in the gap by 7% between 2018-19 and 2020-21. The data further denotes that faster decline in female wages during the pandemic contributed to this decline, compared to a faster growth in male wages, which requires urgent policy attention.

GENDER INEQUALITY IN RELATIONSHIPS AND GENDER INEQUALITIES IN RELATION TO TECHNOLOGY

Gender inequality is also found in the relationship between man and women in a family. Men as a first gender are often given priorities than women. While making decision in a family, men are given more priority than women and men are sometimes thought as more capable than women. Even, in a family women are expected to do all the household chores whereas men are free birds and women are often put restrictions while going out of the house frequently. These kinds of role conflict or work division in a family have generated a conflict among men and women and many progressive women are becoming the victims of these role conflicts in the countries like India.

PAST SCENARIO OF GENDER INEQUALITY IN INDIA

India was beset with several superstitions. These superstitions were mainly prevalent among Hindu communities. Most of the orthodox Hindu families never allowed their girls to go to schools since there were several proverbs associated with it like – if a girl become educated, her husband will die prematurely and she will become widow, the daughter of the family who is educated will be defiled and tarnished in the society, the woman who will be educated will be the kulata and will be the scum of the family, If a woman is wearing shoes, it would be bad for the family, the use of a

female umbrella is grossly abusive to men etc. There were numerous such restrictions in the lives of women in Hindu society. Orthodox Hindus realized that if women become educated, they could not be kept under control for long time. Therefore, they imposed various restrictions on women so that they can be kept under control. Even, this kind of situation is still prevalent in some of the states in India.

EMPOWERING WOMEN THROUGH EDUCATION INDIA

In the above-mentioned context, Savitribai Phule, as a first woman social reformer did remarkable job to remove the disparities and inequalities which were prevalent in India. She was born on 31st January, 1831 in a small village in Satara District in Maharashtra, where the literacy rate among women is still very low. Khandoji, one of the leader in her village, used to say – “this is the girl who will one day jump for freedom in India”.

She is considered to be the principal female educator of India, for improving women’s condition in India. She is viewed as the mother of Indian women’s liberation. Phule and her better half established the principal Indian young ladies’ school in Pune, at Bhidewada in 1848. She is regarded as a significant figure of the social change in Maharashtra.

In 1848, the Jyotirao vehemently protested against superstition of the society. He established the first women’s school for the shudra women of India in the house of Pune Vivaji. Savitribai is the first female teacher of modern India to teach these women. On the soil of India, Savitribai raised the tide of the Renaissance for the education of the super-sudras and women. On September 18, 1851, a second women’s school was established at a place called Rashtrambur. On October 15, 1851, the students of the women school had the opportunity to appear the first examination. On March 15, 1852, a third women’s school was established at Patalonet. Savitribai Phule established a school for the women of Sang and Kulatri. In July 1850, Jyotirao also built another school for girls in the house of Annaasaheb Chipshukar at Buddha Pethe. He formed the Female Education Society for Women’s Education.

SOCIAL ACTIVITIES

In a joint effort with her husband, she devoted herself to various social services, such as establishing a Christian missionary school, hospital, providing food for the famine sufferers, and providing assistance to the fallen wives. On the 18th of July 1880, Savitri participated in the protest against the licensing of liquor stores. In June 1887, Savitribai and Jyotirao started an anti-humanist movement all over Maharashtra. Jyotirao also opened an orphanage in his own home. It was the first orphanage in India. During the famine of Maharashtra, Jyotirao-Savitri used to provide various food for the premature victims. They draw the attention of the government through the society of truth-makers. In 1889, the widow Marriage, Savitribai organized a wedding ceremony for 15 days for widow marriage. This was the first meeting of women by the Women Liberation Movement of India.

OTHER SOCIAL WORK

Savitribai Phule published 'Kavya Phule' in 1854 and 'Bavan Kashi Subodh Ratnakar' in 1892. Furthermore, a poem entitled "Go, Get Education" in which she energized the individuals who are mistreated to free themselves by getting instruction. Savitribai Phule became an ardent feminist. For issues concerning women's rights, she established the 'Mahila Seva Mandal' for raising awareness. She gathered women in a place which was free from caste discrimination. She started two educational trusts in 1850, first one was the Native Female School, Pune and the second one was the Society for Promoting the Education of Mahars, Mangs and Etceteras. In Pune, with around 150 girl students, she was running three schools in 1851.

On April 14, 1870, a meeting of congressmen was called against the widow's head mound at the Elfin Stone High School premises. Savitribai Phule was an anti-infanticide activist who opened a shelter for women which is called the 'Home for the Prevention of Infanticide'. She battled against child marriage and strongly opposed Sati Pratha. She also was an advocate of widow remarriage and began a home for widows and forlorn children. She started the Satyashodhak Samaj for marriage without dowry.

CONSPIRACY TO MURDER

Savitribai's impassioned society was on the verge of revolution. The religious leaders wanted to turn her away from religion by abusing her in obscene language. During Savitri's walk, they tried to throw stones and dung at her. Orthodox Brahmins conspired to remove her from the world. They sent two young men from the lower classes to his house in the deep night to kill him for the greed of money.

CONCLUSION

At the end of the nineteenth century, plague took place in 1896 in Maharashtra. Finally, on the 10th of March, 1897, he left the head of the off spring and moved on. In India's history of women's education, the name of Savitribai Phule is written in golden letter. Today, the famous women's college in Bombay is named as "Savitribai Phule College". But unfortunately, in the history of India, this great woman has never been properly evaluated, who showed the light how to come out of the bondage of slavery and oppression which was imposed on women over thousands of years.

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A STUDY ON THE RELATIONSHIP BETWEEN SELF-EFFICACY BELIEFS IN MATHEMATICS AND ATTITUDE TOWARDS MATHEMATICS IN THE DISTRICT OF BANKURA

Dr. Arup Kundu

Assistant Professor in Mathematics (WBES), Government Training College, Hooghly,
West Bengal, India

ABSTRACT

This study investigated the relationship between attitude scores and self-efficacy scores in mathematics. Thus co-relational research has been done for the purpose of the study and convenience sampling method has been used. The investigation was conducted with 354 madhyamik passed students studying at Bankura district. Results show that significant differences have been found between Science and Social science streams with regard to Attitude towards mathematics and self-efficacy in mathematics. In investigating the relationship between mathematics attitude and self-efficacy beliefs in mathematics “Mathematics Attitude scale” and “Mathematics Self-efficacy Questionnaire” were used. The consequence of the study stated that madhyamik passed students’ attitude scores and self-efficacy scores towards mathematics are high. In addition, there is a strong positive relationship between mathematics attitude scores and self-efficacy beliefs scores in mathematics madhyamik passed students.

Keywords: Mathematics, co-relational, streams, attitude, self-efficacy, madhyamik passed, science, social science.

INTRODUCTION

Mathematics is one of the powerful instrument for conceptualization and application of science and technology. Mathematics stimulates creative thinking, logical reasoning, abstract or spatial thinking, problem solving skill, and effective communication skills also. It is an instrument that can be used in our day to day lives to overcome the obstacles or problem faced therein (Bishop, 1996). Geometry is one of the most vital branches of mathematics (Isil & Ubuz, 2004) and it is related with the properties and relationships of point, line, angles, curves and shapes, etc. Geometry boosts us to describe and judge the world rationally and systematically (Canturk-Guhan & Baser, 2007). In addition, NCTM (2000) strengthens the importance of geometry in schools

mathematics by stating “Geometry is a natural place for the development of students’ reasoning and justification skills” (p.40). In this motive mathematics has been considered as one of the most indispensable subjects in the school curriculum. More mathematics contents are likely to be taught in school and college throughout the world than any other subject (A. Orton, D. Orton and Frobisher, 2004).

LITERATURE REVIEW

Attitude

Attitude : A Brief Concept Note

Attitudes play an important role on students’ mathematics achievement. Phillips (2003) defined attitude as a “multi-faceted psychological construct based on the individuals’ feelings, beliefs and values”. Allport (1935) defined attitude as a “mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related” (p. 810). This definition implies that an attitude is a response to certain experience and is formed through life’s experiences. Allport’s definition indicates the roles that experiences play an important role in implementing attitude. Thus, one’s repertoire of experiences can be regarded as the basic building blocks of his/her attitude.

Eagly and Chaiken (1993) define attitude as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour” (p.155). This definition appears to focus on the exposition of attitude.

The above definition implies that attitude represents one’s feeling and reactions to situations. The above definitions indicate that attitude illustrates one’s intuition and responses to situations. Some studies deal with learners’ attitudes towards mathematics. Choudhuary & Das (2012), Mahanta (2014) they show that attitude towards mathematics is affected by various factors like gender role stereotyping, belief & perceptions about mathematics and affect study habits of students.

Relationship between Attitude and Achievement

Plenty of research has been carried out on the relationship between attitude and achievement. Several researches in western countries show a link between positive attitude and achievement (Iben, 1991; Ma & Kishor, 1997; Tocci & Engelhard Jr, 1991), On the other hand, research carried out in Asia on Asian students showed that positive attitudes were not always present among students with high achievement scores (Leung, 2002; Stevenson, Chen & Lee, 1993). While student’s achievement does not always correlated with a positive attitude. Wilson (2008) recommends that maintaining positive attitudes can have long lasting beneficial effects. In a research by Reed, Drijvers & Kirschner (2010), it was concluded that positive attitudes towards

mathematics uplifted learning styles. The study also revealed that the attitude of students played a vital role in learning mathematics with computer based learning tools.

Attitude towards Mathematics

Attitude may therefore be simply considered as a positive or negative degree of intuition associated with particular experiences. Probably, it is manifest in a student's sentiment on certain subjects of study. Thus attitude towards mathematics may be observed as just a positive or negative emotional prognosis towards mathematics (Haladyna, Shaughnessy & Shaughnessy, 1983, McLeod, 1992).

Attitude may not be germinated in overt behaviour. In other words, behaviour notifying particular attitudes may not outwardly apparent. Thus, attitude towards mathematics may be a conglomeration of patterns of conceptions (Daskalogianni & Simpson, 2000).

The prior discussion points to the reality that attitude is multidimensional, having three components within it: emotional response, beliefs pertaining the subject, and behaviour associated to the subject. From this point of view, an individual's attitude towards mathematics is delineated by the emotions that he/she relates with mathematics, his/her beliefs towards mathematics, and by how he/she behaves (Hart, 1980). Thus attitudes can be positive or negative. Attitudes play a definite role on students' mathematics achievement. These may be expressed in liking, enjoying and showing interest in mathematics, or the opposite reactions. At worst, mathematics phobia (Ernest, 1989) may ensure. As attitude is attached with academic achievement, it is always regarded as a significant variable in educational research (Nkwe, 1985). Ma and Kishor (1997) expressed that there is a general conviction that children perceive more successfully when they are inquisitive about what they learn and that implies them to acquire better in mathematics. There are some research works that examine the role of attitude in Mathematics learning and achievement. Fogarty, et al., (2001) made a tool to measure attitudinal factors that play a role of technology in mathematics learning. Di Martino & Zan, (2010) stated that attitude is a multi-dimensional view and it is never too late to change the student's attitude towards mathematics. Learner attitude therefore plays a pivotal role in mathematics learning and achievement (McLeod, 1992). Researchers have also found a potent relationship between positive attitude and beliefs about mathematics and academic success in mathematics (Ashcraft & Kirk, 2001; Sandt, 2007; Schenkel, 2009; Sherman & Christian, 1999; Tapiia & Marsh II, 2004).

A learner's attitude towards mathematics can have a positive or negative influence on their education. This means that a learner's attitude could be the crucial factor behind his/her success or failure in the subject. Learners may develop either positive or negative attitudes towards mathematics from their educational perceptions. Positive attitude create optimism that is, imposing favourable exposition to activities and events (Gillham, Shatte, Reivich, & Seligman, 2000). For

learners, optimism can lead to persistence. Optimistic children are more likely to stay connected in learning tasks often resulting in enhanced achievement (Wigfield, 1994). In contrast, negative attitudes can enhance mathematics-anxiety (Trujillo & Hadfield, 1999) and may contribute to poor achievement in mathematics.

Self-efficacy

Self-efficacy: A Brief Concept Note

Self-efficacy is defined as an individual's beliefs about his/her capacity, to carry out a task or perform certain behaviours successfully. Bandura, Barbaranelli, Caprara, & Pastorelli (1996) contend self-efficacy can influence a person's life in diverse way (p.1206).

Self-efficacy and Academic Achievement

Researches indicate that self-efficacy influences achievement. Self-efficacy has been shown to be an exact predictor of success in academic achievement (Fast et al., 2010; Multan, et al., 1991). Pajarres (2006) in fact showed that twenty-five percent of student's academic success is based on Self Efficacy. Therefore, to assure students' developed academic achievement, their self-efficacy needs to be boosted. Bandura et al., (1996) state that parents with positive self-efficacy always transmit this to their children. According to Zimmerman (2000), students with high self-efficacy are eager to learn and are preserving and show more resilience to encounter problems (p. 86). The immediate family may also influence a child's self-efficacy. Bandura (1997) explained that self-efficacy is the primary construct in social learning theory and described it as the behavior of an individual that implies his/her to be successful in specific ventures. The four sources of self-efficacy are experience, like being successful or unsuccessful; emotional and physical conditions, like fear, excitement, observing others; experiencing, and witnessing success; and verbal conviction of family, friends and colleagues (Bandura, 1997). Self-efficacy beliefs are maintained from these sources and affect the achievement, enthusiasm of power and the individual's struggles to succeed (Kucukyilmaz and Dubun, 2006). Self-efficacy beliefs also affect individual learners' thinking practices and affective responses. Individuals with high self-efficacy levels feel less anxiety and can be more productive. Students showing certainty in their social skills expect success. Students who are unhesitating about their academic skills expect high standards in examinations and conjecture that the high value of their work will ensure personal and professional favour. Individual with low self-efficacy levels doubt their social skills and often anticipate rejection or ridicule even before establishing social contacts (Unlu, et al, 2010). Those who lack academic self-confidence, conjecture low marks even before sitting for an examinations or registering in a course. In some individuals with high self-efficacy levels tend to achieve academic success, and subsequently greater career options. On the other hand, individuals with low self-efficacy levels suffer social isolation and even compressed academic possibilities (Pajarres, 2002).

Influence of Self efficacy on Mathematical Achievement

Self-efficacy has been shown to influence learners' mathematical achievement (Bandura et al., 1996; Fast et al., 2010; Pajarres, 2005). An individual's mathematical self-efficacy beliefs has been defined as a situational, problem specific assessment of an individual's dependence in her or his expertness to successfully execute or attain a mathematical task (Betz & Hackett, 1994). Self-efficacy beliefs in mathematics have been shown to be a predictor of nature in choosing a vocation (Hackett (1985). Betz and Hackett (1994) investigated that mathematics competence can be a critical filter in vocation choices for both men and women. Hodge (1999) observed that mathematics examination scores is positively correlated with scores in self-efficacy in mathematics. Betz and Hackett (1994) viewed a moderate correlation between mathematics achievement and self-efficacy in mathematics. Handel (1980) investigated that mathematics self-efficacy, mathematics anxiety and mathematics achievement were highly correlated. In another study Hodge (1999) reported that the effect of mathematics anxiety, mathematics self-efficacy and achievement on a mathematics examination, it was found that small but significant relationships exist among these variables. Moreover, Fast et al., (2010) observed that learners with low Self efficacy give up easily when confronted with difficult mathematical problem. Research on self-efficacy beliefs of students has also been undertaken by e.g. Canturk-Gunhan, Baser, 2007; Saracaloglu, 2009; Usher, 2009; Yenilmez and Uygan, 2010. They show that high self-efficacy can enhance geometry learning and this can even be performed by interventions like creative activities.

Mathematics is indispensable for all academic discipline

Mathematics is one of the indispensable aid by means of which the other sciences, pure and applied are capable to forge ahead (Peter, 2011). Mathematics is a tool for universal understanding and communication. Mathematical tools and techniques are always manifested to changing needs of Science, Technology and social science. Among the sciences physics, engineering, chemistry most served by mathematics. Mathematical operations, measurement of distance, areas, volumes, masses and more advance mathematics is needed in the treatment of Collision problems, vibrating strings, motion of fluids, mechanics of continuous media, optics, electricity and thermodynamics etc. In biological science mathematical statistics is extensively used in simple biology, agricultural science and the medical sciences to execute statistical problems. The development of micro-organisms is an exponential function which can be illustrated using the method of calculus. In social science mathematics plays a vital role in understanding most of the concepts and theories as it applies in to day to day occurrences. In geography mathematics is used in the measurement of distances, areas, map projections also more advance astronomical ideas in heavenly bodies are mathematically deduced (Peter, 2011). The dependence of accounting, economics, business administration, data interpretation, quantitative compression and logical reasoning is such that for anyone to demand expertness in any of these areas, he must occupy a prime knowledge of

mathematics beyond the madhyamik level. In law, even though mathematics is not read in immediate forms as in other disciplines, the principles of mathematical reasoning forms the primitive for its understanding. The lawyer also depends on his mathematical skills. Mathematical skills also can be applied for practical judgment and important issues relating to a decision in a hypothetical business situation (Peter, 2011).

RATIONALE OF THE STUDY

It may be assumed that one of the main obstructions to achievement in mathematics is the attitude of students to the subject.

Students in the HS classes have been through the gamut of Madhyamik School education, and should be aware of mathematics as a discipline. They have developed certain attitudes towards the mathematics that are possibly colored by their achievements in it and these attitudes have probably influenced their achievement in mathematics.

Mathematics self-efficacy plays a large role in mathematics anxiety (Rozgonjuk, et al, 2020). In their research, they said that perhaps improving students' mathematics self-efficacy could also be helpful in reducing mathematics anxiety. They also stated it could also be that reducing students' mathematics anxiety could be helpful in boosting their mathematics self-efficacy (Rozgonjuk, et al., 2020). Lee (2009) investigated across 41 countries and found that the low performing countries displayed low mathematics self-efficacy and high mathematics anxiety; the high performing countries displayed high mathematics self-efficacy and low mathematics anxiety. Lee (2009) also viewed that the top performing nations displayed one of the lowest scores on mathematics self-efficacy and the highest scores in mathematics anxiety in Japan and Korea.

This study has attempted to find out the relationship between attitude towards mathematics and self-efficacy in mathematics of students. Further the study has aimed to discern any difference in attitude and self-efficacy between students in the different streams of study.

OBJECTIVES OF THE STUDY

- i. To find out the difference in attitude towards mathematics of science and social science class XI students.
- ii. To find out the difference between self-efficacy in mathematics of science and social science class XI students.
- iii. To find out the relationship between Attitude towards mathematics and self-efficacy in mathematics of class XI students.

METHODOLOGY

The purpose of the study is to determine the relationship between madhyamik passed students' mathematics attitudes scores and mathematics self-efficacy scores. Thus, a co relational research design was employed in the process of the study. The study also measures any mean difference in

mathematics attitude and mathematics self-efficacy between students in the different streams of study.

SAMPLE

The random sample consisted of 354 class XI (just pass out Madhyamik Examination) students drawn up from 12 schools of Bankura district in West Bengal, India. Formal approval from all the school Head Teachers were obtained in order to conduct this research. The sample is as follows:

Table 1A : Method of drawing Sample

Sample State	Sample Districts/Cluster	Sample Sub-divisions/Clusters	Name of Blocks/Clusters	No. of Sample Schools	Number of students
West Bengal	1 Bankura	1 Bankura	1 Bankura	3	95
			2 Bankura II	3	93
			1 Bishnupur	3	85
			2 Kotulpur	3	81

Table 1B : Streams wise and Gender wise distribution of Students participated

Gender	Streams		Total
	Science	Social Science	
Boys	95	45	140 (39.55%)
Girls	122	92	214 (60.45%)
Total	217 (61.30%)	137(38.70%)	354(100%)

Source : School data obtained during field visit in 2014.

DELIMITATION OF THE STUDY

Sample was collected from school affiliated to West Bengal Council of Higher Secondary Education, in only Bankura district of West Bengal.

TOOLS

The following instruments are used in the study –

- i) Personal data sheet cum interview schedule it consisted of particular information about the participants that is Name, age, gender, stream of study, name of school, medium of instruction, marks obtained in madhyakmik examination, father's education level and mother's education level etc. The personal data sheet cum interview schedule was administrated on an individual basis in quiet and peaceful environments. The respondent was first put at light conservation and the interview schedule was gradually and orally administered.

- ii) 'Mathematics Attitude Scale' consisting of 47 likert type items, The Test-retest reliability coefficient of the scale is 0.94 (Kundu, 2018).
- iii) 'Mathematics Self-efficacy Questionnaire' consisting of 14 likert type items, The test retest reliability coefficient of the scale is 0.97 (Kundu, 2018).

DATA ANALYSIS

The researcher personally visited the schools for the collection of data. Quantitative techniques were used in the analysis of data generated by mathematics attitude scale and mathematics self-efficacy scale. The descriptive statistics and Pearson Product Moment correlation coefficient was calculated between mathematics attitude scores and mathematics self-efficacy scores. Independent samples t- tests were used to compare the responses to the mathematics attitude and mathematics self-efficacy between two streams Science and Social science if the mean responses were different. Data were analyzed by using the SPSS 23 statistics programme and presented in tables.

FINDINGS

Descriptive and inferential statistics results regarding Madhyamik passed students attitude towards mathematics are present in Table 2.

- i) To find out the difference between attitude towards mathematics of science and social science class XI students.

The null hypothesis in this purpose—

H_{0A} : There is no significant difference between attitude towards mathematics of science and social science class XI students.

Table 2 : Mean difference between attitude towards mathematics of Class XI science and social science students

Variable	Mean (N = 354)		Std. Deviation (N = 354)		t-Value	Df	Level of Significant
	Science N=217	Social Science N=137	Science N=217	Social Science N=137			
Attitude towards mathematics	194.27	161.62	17.389	23.370	15.001	352	.000 (Significant)

Table 2 represents the mean difference between class XI students with regard to attitude towards mathematics. The mean scores of science students and that of social science students with

regard to attitude towards mathematics were 194.27 and 161.62 respectively. The standard deviation of scores of science students and that of social science students with regard to attitude towards mathematics were 17.389 and 23.370 respectively. The calculated t-values between science and social science students with regard to attitude towards mathematics were 15.001, which is significant at 0.01 levels. Thus, H_{0A} is to be rejected, and there is a significant difference in attitude towards mathematics between science and social science students. Table-2 shows that science students show higher mathematics attitude than social science students. Hence it can be concluded that, there exists a significant streams wise difference in attitude towards mathematics in favour of Science students.

Descriptive and inferential statistics results regarding Madhyamik pass out students' Self efficacy in mathematics are present in Table 3.

- i) To find out the difference between self-efficacy in mathematics of science and social science class XI students.

The null hypothesis in this purpose—

H_{0S} : There is no significant difference between self-efficacy in mathematics of science and social science class XI students.

Table 3 : Mean difference between self-efficacy in mathematics of Class XI science and social science students.

Variable	Mean (N = 354)		Std. Deviation (N = 354)		t-Value	Df	Level of Significant
	Science N = 217	Social Science N = 137	Science N = 217	Social Science N = 137			
Self-efficacy in mathematics	58.424	44.618	8.314	11.196	13.252	352	.000 (Significant)

Table 3 represents the mean difference between class XI students with regard to self-efficacy in mathematics. The mean scores of science students and that of social science students with regard to self-efficacy in mathematics were 58.424 and 44.618 respectively. The standard deviation of scores of science students and that of social science students with regard to self-efficacy in mathematics were 8.314 and 11.196 respectively. The calculated t-values between science and social science students with regard to self-efficacy in mathematics were 13.252, which is significant at 0.01 levels. Thus H_{0S} is to be rejected, and there is a significant difference in self-efficacy in mathematics between science and social science students. Table-3 shows that science

students show higher mathematics attitude than social science students. Hence it can be concluded that, there exists a significant streams wise difference in self-efficacy in mathematics in favor of Science students.

The following table shows the descriptive statistics for the two variables attitude towards mathematics and self-efficacy in mathematics

The results are presented in the table-4 as follows-

Table 4 : Descriptive statistics results of attitude towards mathematics and self-efficacy in mathematics

Variables	N	Minimum	Maximum	Mean	Std. Division
Attitude towards mathematics	354	110	228	181.70	25.426
Self-efficacy in mathematics	354	16	69	53.119	11.638

Both variables, attitude towards mathematics and self-efficacy in mathematics were found to be continuous.

- i) To find out the relationship between Attitude towards mathematics and self-efficacy in mathematics of class XI students.

The null hypothesis for this purpose is-

H_{0AS} : There is no significant relationship between attitude towards mathematics and self-efficacy in mathematics of class XI students.

The Pearson product moment correlation technique was used to test the hypothesis.

Initially, a scatter plot between attitude towards mathematics and self-efficacy in mathematics was constructed.

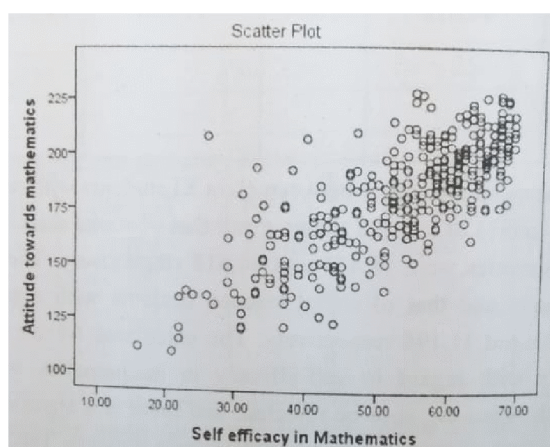


Figure 1 : The relationship between students' attitude towards mathematics and Self efficacy in mathematics.

Preliminary analyses were observed to ascertain no violation of the assumptions of normality, linearity and homoscedasticity. This figure 1 indicates a viable liner correlation between the two variables.

In order to examine the relationship between students' attitude towards mathematics scores and self-efficacy in mathematics scores Pearson product-moment correlation coefficient was calculated. The results are presented in table 3.

Table 3 : Pearson product-moment correlations between Attitude towards mathematics and Self efficacy in mathematics scores.

		Attitude	Self-efficacy
Attitude	Pearson Correlation	1	.782**
	Sig. (2-tailed)		.000
	N	354	354
Self-efficacy	Pearson Correlation	.782**	1
	Sig. (2-tailed)	.000	
	N	354	354

** Correlation is significant at the 0.01 level (2-tailed).

The relationship between attitude towards mathematics scores and self-efficacy in mathematics scores was investigated by using Pearson product-moment correlation coefficient. Table 3 shows that the strong positive correlation $r = 0.782$, $p < 0.01$ between attitude towards mathematics and self-efficacy in mathematics and highly significant. This shows that proper attitude towards mathematics can built self-efficacy in carrying out mathematical activities and solving problems, and thus enhancing mathematical competency.

CONCLUSION

The results of this study show that there is a significant difference between the attitude towards mathematics and self-efficacy of students attending science and social science streams. Kundu (2018), Avci et al., (2014) and Avci et al., (2011) have found similar results with this research. This may be due to the fact that students in social science generally do not have a strong mathematics background. Therefore, they do not understand the lesson easily.

This study, among class XI students of Bankura district, shows that self-efficacy in mathematics is strongly influenced by attitude towards the mathematics. A highly significant relationship between the students' attitude towards mathematics and self-efficacy in mathematics

was found in this study. The studies in the literature have shown a significant relationship between attitude and self-efficacy (Jameson 2013; Karadeniz 2014; Bariley 2012; Kundu & Ghose 2016). That is, the mathematics attitude and self-efficacy are not independent from each other. Learners whose attitudes are more positive towards mathematics have higher self-efficacy beliefs towards the subject. The research shows that positive attitude towards mathematics being higher self-efficacy appreciation, whereas negative attitude brings lower self-efficacy appreciation. Yavuz Mumcu & Cansiz Aktas (2015) have found similar to this research. Learners' mathematics self-efficacy could be developed by reducing their mathematics anxiety (Peters, 2013), which could be favorable to them in progressing their attitude and interest (Louis and Mistele, 2012). In order to get the learners to become more positive towards mathematics, a congenial learning ambience where they can nurture the sense of self efficacy should be provided.

Good achiever in mathematics is an important determinant for self-efficacy and attitude towards the mathematics (Yavuz Mumcu & Cansiz Aktas, 2015). Similarly, social science students are observed to have lower level of affective features compared to science students. Consequently, this study has managed the change of affective characteristics, a noticeable dimension in mathematics teaching learning, in students studying at different streams of studies, it has supported the hypothesis. This research has given answers to the question of why social science stream students lag behind in mathematics than science stream students.

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EDUCATIONAL THOUGHTS OF BUDDHA AND ITS PRESENT RELEVANCE IN INDIA — AN ANALYTICAL STUDY

Dr. Samir Chattopadhyay

Assistant Professor of Education, Department of Education, Jadavpur University, Kolkata

ABSTRACT

The world has faced several challenges since January 2020 when the World Health Organization has declared it pandemic. The continuous three years of turmoil made life full of horrors for each individual throughout the world. All the religious populations are far away from the pre-corona situation. A tremendous current of death rallies makes the eight billion world population full of despair and sorrow. International cooperation with an all-around support system was the teachings of Buddha for the last two thousand five hundred years. The preaching of Buddha's religion was always in favor of the best human societies that lead to winning the sorrow of an individual. Buddha's educational thought was to lead a peaceful life by overcoming the sorrows of each individual. He preached four noble truths and eight paths for all human beings. Buddhist Education aims to change an unwise to wise, beast hood to Buddha hood. Present educational thought in India and the world is very much relevant to overcome the battle among the nations which is only possible through Lord Buddha's teaching.

Keywords: Educational thoughts, Buddha's teaching, analytical study

INTRODUCTION

International cooperation is crucial in today's world, and Buddha's teachings from two and a half thousand years ago emphasized this importance. His teachings focused on creating the best human societies that could overcome individual sorrows. This is especially relevant now, as the world has gone through a turmoil for the last three years due to the coronavirus pandemic. People across the globe are living in fear, uncertainty, and despair. All religious populations have been affected and are far from their pre-corona situation. A tremendous current of death rallies is causing the world's population of eight billion to feel full of despair and sorrow.

In this context, the modern education system is ambiguous regarding the continuity of vast scientific discoveries used in every sphere of life. The fear is that without them, global tranquillity may be denied. The goal of life is therefore dependent on the continuation of these discoveries.

To create a peaceful society, Jacques Delors, the eighth President of the European Commission, has emphasized four pillars of Education: learning to know, learning to be, learning to do, and

learning to live together. These four pillars indicate the key ingredients necessary for peaceful cooperation among people.

In this paper, the author will explore Buddha's educational thoughts and their relevance in the present scenario, especially in the post-corona world. By analyzing Buddha's teachings, one can gain insight into creating a peaceful society through international cooperation and education.

DISCUSSION

A brief life sketch and Educational Thought of Buddha :

According to historical research, Gautama Buddha (Siddhartha) was a spiritual leader who was born approximately 2600 years ago in the Shakyamuni kingdom of Kapilabastu Nagar, which is now situated in Nepal. Siddhartha's father was King Shudhodhana and his mother was Queen Maya. His mother died just a few days after his birth and he was raised by his mother's sister-in-law, Mahaprajapati Gautami, that is why he is known as Gautama Buddha.

Buddha grew up as a royal prince, leading a life free from sufferings until he was 29 years old. He married Yasodhara and became the father of his son, Rahul. Despite being content with his life as a prince, he wanted to renounce all kinds of desire which is the cause of sufferings and wanted to explore the truth of human life. He renounced his life of luxury, wealth, and power in order to become a monk and seek the truth of human life.

His journey towards enlightenment began with a period of asceticism and self-denial, but he soon realized that this was not the path to enlightenment. Instead, he discovered the middle way, a path of moderation that avoided both extremes of self-indulgence and self-denial.

Buddha spent six years on his spiritual journey, during which he gained a deep understanding of the nature of the human mind and the causes of suffering. He believed that all our problems and suffering arise from our confused and negative states of mind, and all our happiness and good fortune arise from peaceful and positive state of mind. He developed a set of teachings, known as the Four Noble Truths and the Eightfold Path, to help people overcome their suffering and achieve enlightenment.

The teachings of Buddha have had a profound impact on human history and have influenced many cultures and religions throughout the world. It continued to inspire people to this day to seek the truth and find inner peace.

Buddhism :

The four noble truths :

According to extensive research on Buddhism, the teachings of Buddha regarding Dhamma or Dharma have been regarded as the ultimate truth leading to liberation from the ignorance of life. The four noble truths represent a fundamental structure for comprehending the core beliefs of Buddhism.

The first noble truth clearly articulates that life is **full of suffering (Dukkha)**, which is due to human desires and expectations that often have conflict with the reality of the constantly changing world (Anicca). Therefore, each individual must experience Dukkha in their life.

The second noble truth emphasizes that the **root cause of suffering is attachment**. People tend to assume permanence to impermanent things, leading to a mismatch between expectations and reality. Buddha contended that our ideas about objects and perceptions are all transient, and even the notion of a “self” is an illusion as there is no permanent self. Clinging to these ideas and craving them ultimately leads to suffering.

The third noble truth suggests that **suffering can be eliminated** in this life. Nirvana, akin to the Hindu concept of Moksha, can be achieved in life through rigorous discipline and effort. Nirvana denotes freedom from troubles, worries, ideas, and the illusion of self, and by following Buddha’s teachings, one can become an arahant.

The fourth noble truth lays out the **path to the cessation of suffering, known as the Middle Way**. It is a route between the two extremes of clinging and aversion, both forms of attachment, arriving at a state of complete equanimity. The Eightfold Path constitutes the Middle Way, including right understanding, right intention, right speech, right action, right livelihood, right effort, right mindfulness, and right concentration.

The teachings of Buddha on the four noble truths provide a complete framework for understanding the human condition and the path to liberation from suffering, which is a vital aspect of Buddhist philosophy.

THE EIGHTFOLD PATH

Summa, which means “right,” is a concept in Buddhism that aims to promote the end of suffering. It is traditionally divided following sections and subsections :

1. Study - Cultivating Wisdom

- **Right Understanding:** One becomes acquainted with the basic principles of Dharma and the Buddha’s teachings, gradually awakening an understanding.
- **Right Intention:** One contemplates the desire for all beings to be happy and free from suffering. One cultivates goodwill, harmlessness, and non-attachment, avoiding tendencies towards greed, hatred, and harm.

2. Practice - Cultivating Virtue

- **Right Speech :** One should refrain from false speech, gossip, cursing, swearing, or meaningless babble. One should communicate with others in kind and gentle words.

- **Right Action** : One vow to live by the five precepts of non-harming (ahimsa) and refrain from harming sentient beings and taking what is not offered. One also refrains from sexual misconduct and stupefying drinks.
- **Right Livelihood** : One earns a living in a way that benefits humanity.

3. Meditation - Cultivating Concentration

- **Right Effort** : The student pays deliberate attention to developing positive thoughts that alleviate suffering and let go of negative ones, practicing generosity and patience.
- **Right Mindfulness** : One takes meditative awareness into everyday life, restraining the mind's proclivity to make immediate judgments, reducing its tendency to need stimulation, and sharpening its awareness in the present moment.
- **Right Concentration** : One takes time each day to practice meditative awareness.

These eight elements may be symbolized by a wheel and practiced simultaneously, as the practice of one supports the practice of the others. The Buddha maintained that one could develop the virtues described as one would develop any skill, with regular practice. It is worth noting that Buddha saw himself as a healer, not as a God. He was never represented in human form until 300-400 years after his death. He described himself in his own words “**Remember me as one who is awake.**”

EDUCATIONAL THOUGHTS OF BUDDHA

There was racial discrimination in the society in India during the time of Buddha. This discrimination was according to the profession of man and according to birth. In the society, there were four divisions of Varna of whom Brahman was the superior. They enjoyed rights to religious training and education. But other categories of people are deprived of their religious and educational rights.

It should be observed that it is “the life of holiness” that Buddhism emphasizes much more than the philosophy of life, speculations concerning the mysteries of life and death and such ultimate truths. The entire system of Buddhist education must be rooted in faith (saddhâ)— faith in the Triple Gem, and above all in the Buddha as the fully enlightened One, the peerless teacher and supreme guide to right living and right understanding.

Based on this faith, the students must be inspired to become accomplished in virtue (sîla) by following the moral guidelines spelt out by the Five Precepts. Students should come to appreciate the positive virtues such as kindness, honesty, purity, truthfulness, and mental sobriety. They must also acquire the spirit of generosity and self-sacrifice (câga), which are essential for overcoming selfishness, greed, and the narrow focus on self-advancement that dominates in present-day society.

In the early period, Buddhist Education was limited to the monasteries and only for the members of the monastery. But later on, it was open to the mass, even lay people got scope to have education in those institutions.

In modern days, Buddhist Education became wide open and embraced by the people of various sections of society. Buddhist Education aims to change an unwise to wise, beasthood to Buddhahood.

According to Lord Buddha, after achieving knowledge through six years of practice and seeking answers about human life, the ultimate goal was to remove sorrows. This teaching can be considered the educational thought of Lord Buddha. His teachings encompassed various aspects of life, including spiritual attainment, mindfulness, positive thinking, and the development of virtues.

First, Lord Buddha advised his pupils to accept everything only after verifying ideas and views with logic and judgment. He encouraged them to question their mind, body, and outer and inner environment to ensure they don't blindly follow the utterings of sacred people or teachers.

Second, he taught that spiritual attainment was not confined to certain castes, and everyone had the potential to achieve it, regardless of gender, age, social status, or moral standing. He emphasized the quality of mindfulness, which involves being aware without judgment.

Third, Lord Buddha's teaching focused on the methods for gradually overcoming negative mental activities such as anger, jealousy, and ignorance and for developing positive minds such as love, compassion, and wisdom. Through this, we can experience lasting peace and happiness.

Fourth, these methods work for anyone, anywhere, of any age. Once anyone gains experience, they can pass them on to others, allowing them to enjoy the same benefits.

Fifth, the Buddhist way of life is still relevant today as it was when Buddha appeared in ancient India. It advocates searching for peace, loving-kindness, and wisdom.

Finally, the seven factors of awakening, also known as Inner Wealth within the Buddhist religion, are seven mental capacities placed significant value. These factors are mindfulness, investigation, energy, joy, tranquility, concentration, and equanimity.

PRESENT EDUCATIONAL SYSTEM IN INDIA

India's educational ideology has evolved over the course of different dynasties spanning more than thousand years. The original Indian thoughts of Hindu and Buddhist culture and education were destroyed by various rulers. The invasion of Mughal Emperors changed the then-Persian culture and education, while the British rulers changed the traditional system of mixed education of Tole of Hindu and Madrasah of Mughal to a modern School education according to Christian concepts.

However, after the independence of India in 1947, several Commissions were formed to develop scientific educational parameters. Since independence, India has mostly followed the British Educational System for Science and Technology, but it has paid scant attention to the study of religious scriptures. This lack of attention towards the study of scriptures has deprived Indians from the true understanding of culture and knowledge in India.

Education, from kindergarten to postgraduate levels across the world, is predominantly competitive, with a focus on the accumulation of resources rather than cooperative sensitization. This has resulted in a world population filled with the ingredients to fight with each other, highlighting the fallacy of the modern education system.

The National Education Policy 2020 of India has introduced a new framework for school education, with a 5+3+3+4 structure and a higher education frame of three to four years for undergraduate courses and one to two years for post-graduate courses, which replaces the traditional 10+2+3+2 system. While this may align with modern international education standards and promote economic growth by developing a skilled workforce, it may not lead to a peaceful life for the population of India if it does not include value education, as suggested by Lord Buddha and other great personalities.

Unhealthy competition can destroy the inner spirit of a nation, and therefore, Buddhist educational thoughts are necessary to search for peace in life. The NPE-2020 aims to develop learners' skills and competencies through modern science and technological education, but it must also prioritize value and peace education. Without this, the education system may produce a society of people who act like beasts rather than humans with kindness and compassion. Hence, it is crucial to incorporate Buddhist educational thought judiciously to help individuals become potential kind-hearted human beings.

RELEVANCE OF BUDDHA'S EDUCATIONAL THOUGHTS

The goal of human life, in a spiritual sense, is to achieve self-knowledge. However, this is only possible when an individual lead a peaceful life, which is attainable through both mental and social peace. On a societal level, the goal should be to establish an environment of cooperation that promotes peace among its members, thus creating a heavenly society. The four pillars of education are crucial in achieving this goal, which is commonly referred to as "learning to live together."

To achieve this objective, the education system must be a careful blend of modern change in society and valuable education, which promotes mental discipline and peace from early on in life. This can be achieved through value education and cooperative learning, which are the teachings of Buddha. Japan is an excellent example of a country that has successfully incorporated Buddha's teachings into its current scenario. India can follow this example and work towards transforming its society.

CONCLUSION

According to Buddha's educational philosophy, it is important for individuals, regardless of gender, to develop values and ethics that align with nature and the environment. From an early age, everyone should cultivate a sense of selflessness, generosity, and self-actualization. The ultimate goal is to eliminate the sorrows of life through the power of knowledge and activities that promote peace at the individual, societal, and global levels.

However, modern technology and ICT have the potential to distract learners from valuable and peaceful education. Without incorporating value and peace education into the school system, AI and other technological advancements may disable critical thinking and lead to brutality.

To successfully incorporate Buddhist educational principles, practical applications are necessary. This can only be achieved if the government, guardians, and teachers understand the whole process. By blending modern education with Buddhist educational principles, the world could transform into a heavenly place, fulfilling the ultimate desire of the global population. This would also achieve the four pillars of education.

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DIMENSION AND REALISM OF BLENDED LEARNING APPROACHES IN THE FIELD OF HIGHER LEVEL OF EDUCATION

Susmita Paul

Assistant Professor, Department of Education, St. Xavier's College (Autonomous), Kolkata,
West Bengal, India

ABSTRACT

The main focus of this study is to explore the wide opportunities provided by blended learning in the field of higher education. The word blended learning signifies both online and offline mode of learning which continue simultaneously in same classroom. The word blended learning indicates that it is completely device oriented, students centric and activity based learning. The study had been conducted to know about practical value of blended learning. A descriptive qualitative method has been adopted for this study. The findings of the study signify that blended-learning method was more flexible, accessible, and feasible to all and teachers could easily track student's progress through Google form, online interview. According to learner's requirement, teachers could insert different learning software programme.

Keywords: Blended learning, collaborative learning, teacher, student

INTRODUCTION

In a blended learning approach, both virtual learning and usual classroom learning take place. Teacher can use both the method for teaching in the teaching-learning process. Blended learning, also known as hybrid learning, is a combination of digital learning and traditional learning. The advantage of blended learning is that it provides students multiple opportunities. In a traditional classroom, students often feel bored to listen long lectures from the teachers and it often brings monotony in the lives of the students. In this scenario, the use of technology or audio-visual aids in the classroom or the teaching-learning process becomes more effective. This kind of classroom offers students to explore their capabilities. Teacher as a facilitator in the classroom focuses on improving students' opportunities in the classroom and they also focus on assessing individual learner's need in the classroom. From this point of view, blended learning concept is much more beneficial for students rather than the traditional classroom.

We are now living in a digital world where education system is changing and upgrading itself continuously. Though in a country like India, implementing blended learning is really a challenge,

especially in remote villages, but it cannot be ignored by considering the present context. It can be said that the blended learning approach seeks to balance face-to-face learning and online learning within a course. It refers to technology-oriented activities which engage students in manifold ways instead of being only the classroom listeners. Blended learning approach enhances interactive session in classroom. So, it enhances students' communication skill, motor skill and various social skills.

As we all know web-based activities have greater impact in the field of education because the main aim of education is to generate skill based human being with complete knowledge of theoretical point of view. Blended learning approach truly will help us to accomplish the aim of education because some technology-oriented activities such as exploring information through internet, making power-point in specific topic, data calculation in excel sheet and traditional classroom related activities like participating debate, knowledge of essay writing, making chart model on specific topic, data representation in word format and many other activities could be done by using technology. In this mode students can join online classes if they are not able to present physically in the classroom and teacher might take online classes if they are able to arrive the institution in time. Sometimes, teachers also use audio-visual teaching aids and deliver instruction to the students. Even, students can also complete their task by using technology.

BLENDED LEARNING : A BRIEF CONCEPT NOTE

Graham (2006) defines blended learning as follows: "Blended learning systems combine face-to-face instruction with computer-mediated instruction" (p. 5). Garrison and Kanuka (2004) define "blended learning as the thoughtful integration of classroom face-to-face learning experiences with online learning experiences". Allen and Seaman (2010) argue, "a blended learning course as follows : Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings." According to Driscoll (2019, p. 1), blended learning signifies different things to different people. The meaning of the term "constantly evolves as it incorporates new concepts along with each new technology, thus illustrating blended learning's potential for growth. He further explains that blended learning may take the form of combining modes of web-based technology, pedagogical approaches, instructional technologies, and actual job tasks". Elsenheimer (2006, p. 26) also argued that "blended learning is an approach to instructional design that seeks to maximize learning potential by applying the most effective form of instruction for a given program element." This general description of blended learning is narrowed down by Oxford Learner's Dictionaries, which describes blended learning as a way of studying a subject that combines being taught in class with the use of different technologies, including learning over the internet." Graham (2013) provides a more straightforward definition of blended learning, which is the combination of both "online and face-to-face instruction."

We have already discussed several definitions of blended learning. These definitions describe blended learning as a mode of teaching-learning instruction which give equal importance to on-line and off-line classes. By adding few web-based activities and traditional classroom venture, it was never a successful method. The implication of blended learning approach mostly depends upon the need of school administration and demand of learners and it requires an Integrated approach and prearranged materials.

Watson (2008) described “blended learning as a major segment of a continuum between fully online and traditional face-to-face settings.” The blended learning continuum comprises the following categories :

- 1) It is fully online and distance learning-oriented course.
- 2) It has web-based curriculum with choice for teacher’s direction, but not essential,
- 3) It is completely online syllabus with stipulated days, necessary in smart classroom or computer room.
- 4) The learners can assemble in computer lab in every day and fulfil their needs.
- 5) Online learning is very much significant because it is not syllabus oriented learning nor it is confined in four walls.
- 7) In this approach, conventional teaching process is less important and it emphasize more on CAI.

Now we have already known that Blended learning is a unique approach and it is effectively used in the education process. With the help of E-learning software and guidance of teacher, student can complete his/her project.

Several definitions of blended learning approaches have been proved that it satisfies learners’ need because only in this method students enjoys flexible schedule time, self-paced online materials and face to face interaction with teacher.

The significant trademark of Blended learning is as follows :

- Motivated students’ participation in learning.
- Improved teacher- student interdependence.
- Increased maturity for learning.
- Time scheduling and mobility.
- Upgraded student learning outcome.
- Strengthen school organization prestige.
- More liberal and reliable teaching learning atmosphere.
- More manageable for self and permanent learning.
- Better scope for activity-based learning.

OBJECTIVES OF THE STUDY

The study was conducted to attain the following objectives:

- 1) To investigate the dimension and realism of blended learning approaches among the learners of higher education.
- 2) To study the level of interest of learners in relation to the blended learning approaches in the field of higher level of education.
- 3) To find out the pragmatic values of learners on blended learning approaches in the field of higher level of education.

DIFFERENT DIMENSIONS OF BLENDED LEARNING APPROACH

Blended learning could be an effective option when students are willing for personalized learning without increasing their expenses. With this approach face to face interaction takes place in the classroom, while through online materials and some additional activities are delivered. In some other cases, infrequent meetings happen for problem solving and community building. There are many reasons why schools are switching to blended learning. Teachers are switching to the blended learning mode on the basis of its suitability to the subject and their curricular needs. Blended learning can be chosen based on the requirement from the following six models.

- 1) **Face-to-Face Driver Model** : This model is the nearest to the typical school structure. This model allows students who are willing to progress above their grade level. In this model a significant amount of classroom teaching time has been replaced by online activities. In introduction, online instruction is allowed to only certain students in a given class on case-to-case basis. They can use these online activities as a supplement to the face-to-face instruction.
- 2) **Rotation Model** : In this model of learning students rotate into various models, such as station rotation, lab rotation and individual rotation. Out of these sub models some are better suited in school level and others work well in college level.
- 3) **Flex Model** : In this model students choose how they want to take instructions - online or face to face. Learning is self-guided and students can learn new things in digital environment, however materials are primarily delivered through online and teachers in the classroom have to provide on-site support as needed.
- 4) **Self-Blend Model** : In the self-blended model of learning, students opt online courses in addition to their traditional face-to-face learning. In this model students get little support from their teachers in this model of learning, student themselves make the progress and monitor their learning.
- 5) **Online Driver Model** : This model is the opposite to the face-to-face model. Here students can take their course remotely and material is primarily delivered via an online platform. If

they have any question, they can chat personally with the teachers. In this model, face to face meeting is not mandatory.

- 6) Online Lab Model :** In this model students can complete their course through online, including those which are not part of school site. Schools are adopting this model as resources getting limited day by day. Though students are learning online but travel to a dedicated computer lab to complete their coursework. In those labs trained professionals supervise their work.

Now a day, students are technology oriented and understand the potentials and opportunities of blended learning. Traditional teachers often don't use this learning model but due to the financial stress. Now a day, online education is the most viable and effective solution.

Learner-centric Approach : Mix-method or blended learning system becomes more popular among college or university level students because of its flexibility of learning experience. According to Smart and Cappel, the principle of effective learning should be activity based and enquiry based. In this regard blended learning approach should be more emphasized on student's engagement on completion of project or involving creative activities like making working model on specific theme. Effective blending of online learning and face-to-face learning creates conditions that are highly encouraging to students' self-learning. Blended or hybrid method - a combination of person to person and E-learning instruction has been proved that enhancing relationship between student-teacher and it has increased students' active participation in learning process. Tallent-Runnel's studies proved that students like to learn at their own style. In this respect, Blended learning always motivated students' self-study habit. Teachers' advice or notes are very significant instrument for every educator but it should not be the only tool to communicate students. According to Wurdinger and Carlson, lecture method only help to increase the comprehension level of students and they can understand theories but the blended approach help to increase students' creative thinking along with deep knowledge of theories.

Downing, et al., (2014) in their paper have discussed the potential of Blended learning in the context of Student's engagement. This study proved that students are more attentive when they are learning through blended approach rather than face to face learning because in this hybrid learning approach individually they are engaged to accomplish their own task without a teacher's support. Therefore, it automatically increases their interest level, their attention level, their motivation level. One important reason for supporting the blended learning approach is that it helps them to complete their assignment or task without mentor's interference. According to UGC guideline (2021), blended learning approach has several possibilities. These are:

- 1) It expends interest level of the learners because this approach focuses on web-based learning.
- 2) Blended learning approach is followed by discovery method. It supports the idea of exploring the new theme so that the students are actively involved in finding new concepts for a long time.

- 3) Blended learning approach supports self-directional learning.
- 4) Self-improvement (students) is one of the main principles of blended learning medium of instruction.
- 5) Blended learning approach generates the feeling of self-responsibility aptitude of students.

PRCTICAL VALUE OF BLENDED LEARNING APPROACH IN THE FIELD OF HIGHER EDUCATION

The study by Alseweed (2013), Dogan (2016), Chilkoti (2016), Kaur (2017) have revealed that Blended learning system enhances the level of self-learning of students in the field of higher education. Blended learning connects teacher activities, student's effort, learning design, study pattern through technology. So, we cannot avoid the ideas of blended learning from our education system. According to Dziuban, et. al, (2004), instruction through blended learning mode improves the literacy level of information which is very much beneficial for teachers and students in their academic area and their future professional arena also.

There are a few reasons for adopting the blended learning approach in the educational institute. Few significant points have been discussed below :

- In comparison between traditional formal learning and on-line learning, blended learning is specifically very powerful learning approach in our technology-oriented education system.
- Blended learning is much better than face-to-face learning because it is associated with students' higher level of achievement.
- If we consider economic value of blended learning approach, it is less expensive than the face to face mode of learning.

The next few points also discussed the practical utility of blended learning approach in the field of higher education:

Face-to face and online pedagogy mode of teaching instruction: Students in blended learning environment are not passive listeners. They are involved in many activities and learners are getting opportunities to fulfill their project very innovatively with the help of online resources. The role of teachers in blended learning approach is not only delivered through their lecture. The instructors also are busy in providing their lecture in a very creative way.

Support all round development of learners: The Blended approach of learning helps the students to generate new skill, new learning procedure, technology-oriented ideas and creative proposal for the improvement of student's practical knowledge. In this platform students can share their ideas, their innovative activities and significant documents which will help to increase their cognitive skills, psychomotor skills and affective skills. In short, we can say that blended learning approach is very much useful to produce expert human being in their professional area.

Cope-up with real world: Students are facing realistic problems when they reach in field of higher education level. The blended learning environment try to encourage the students to meet realistic situation and learners also learn the route to overcome the problem with their own capabilities. Instead of explaining the theories, learners should be given the opportunities to visit the actual field and acquiring relevant information which will help them to solve the real life problems.

Projecting topic in an innovative way: In blended learning approach, students from different fields like—science, language or humanities can produce their concept through cartoon strips or documentary film with the help of digital source. Story creation tool, info graphic representation, podcasts provide them to present any subject oriented issues in several creative styles. Blended learning design will intensify student expression skill and help them to introduce their ideas creatively.

Generating the ideas of knowledge mapping: Online learning features like inserting data, installing new educational app, uploading images, adding slide etc. make learning more interesting and purposeful. With the help of online learning tools learner can present diagrammatic representation of any topic and they can also comprehend the topic from another perspective. Students will find out co-relation between their own subjects with other subjects through the mind mapping.

We have already discussed the utilitarian and practical values of blended learning approach in our modern education system, but it has few shortcomings too. These are followings :

- This approach of learning often becomes a major cause of distractions to the students.
- Although blended learning is increasing student's effectiveness, it also tends to weaken the learning habits of learners.
- Diligent and sincere students will make the best of this method of unconventional learning. However, there are a few of those students who would take advantage of this. But the too much use of social media during study might spoil the whole purpose of this method.

CONCLUSION

In this study, it is found that blended learning approach is highly effective for the learners who are enrolled in colleges or universities. In learner-centric curriculum, blended approach is really energy-saving and it consistently emphasis on students' activities along with teacher instruction. Very few methods/approaches provide students self-learning space but blended learning approach is very popular in this field. Blended learning approach also provide students a collaborative space through online platform which helps the students to solve various classroom related problems. After pandemic, blended learning approach has become most popular approach of learning due to its feasibility.

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SEASONAL WORKERS AND THE RIGHT TO EDUCATION OF THEIR CHILDREN IN THE SOCIAL PERSPECTIVE OF WEST BENGAL

Dr. Anujit Patra

State Aided College Teacher (SACT-I), Ramakrishna Mission Sikshanamandira, Belur Math, Howrah, West Bengal-711 202 (ORCID 0000-0001-5635-2142)

Dr. Abhijit Guha

Associate Professor, Ramakrishna Mission Sikshanamandira, Belur Math, Howrah, West Bengal-711 202 (ORCID 0009-0007-2659-304X)

Dr. Partha Sarathi Panda

Principal, Shantipur P.T.T.I., Nadia, West Bengal-741 404 (ORCID 0009-0007-2659-9225)

ABSTRACT

The Present study is an in-depth investigation of taking Bankura district in West Bengal, India, as a case for exploring the context of seasonal migration as a measure of livelihood and thereby compromising the educational rights of children. The researchers have employed qualitative inquiry for collecting data focused on the specific migrants of this district. From the qualitative analysis of the recorded data, it has been found that seasonal migration is a very common event in the socio-economically marginalized group, generally the SC and ST population of this district. They migrate to 'POOB' (the east) with all their family members. It is also found that regular school education of the children is seriously hampered by their livelihood. This study observes that the children are losing their formal education throughout the year at the cost of the livelihood of their parents. This study recommends some provisions like the introduction of farmers'/migrant workers' schools, mobile schools, college-going students' or trainee teachers' community service of teaching in local areas, provision of inducting migrant school-going children at particular classes in nearest schools, continuous vigilance of local committee for the education of those children, restricting the employers to involve the children as helping hand in homemaking and letting them provide education of workers' children etc. If these children are enthusiastically included in the education system and continue to participate in the education system, the 'inclusive education' as envisaged by our nation will proceed to its realization.

Keywords: Seasonal Migrant Children, Educational Rights, Ways of Inclusion.

INTRODUCTION

“Access to education still a dream for migrant children” - The Hindu Business line (23 Nov. 2018). Similarly, “UNESCO report highlights steps taken by India to combat effects of seasonal migration on education” - The Times of India (20 Nov. 2018). Before the said headlines of daily news in India, Rogaly et al. (2001) explained why seasonal migration happened in the border areas of Jharkhand and West Bengal and how they influence the social changes in the agrarian culture of West Bengal. Specifically, they mentioned the exploitations of migrants’ rights in terms of livelihood and education of the children. A big problem with educating children in India is seasonal migration - if kids of seasonal migrants cannot attend the same school for the whole year (Rajput & Verma, 2018). Very recently Pandey (19, April 2021) mentioned that the supreme court of India has already directed all the states to notify the court about the number and status of migrant children in India and directed to look after their fundamental rights. Sadhu (2015) a social worker of an NGO known as “Save the Children” explained how a large number of children are being deprived of school education due to seasonal migration from Jharkhand to West Bengal.

The Right of Children to Free and Compulsory Education (RTE) Act, 2009 provides free and compulsory elementary education of equitable quality to all children, including the children of migrant workers, of 6-14 years of age. The RTE Act provides norms and standards for the opening of schools in neighbourhoods at the elementary level. Section six of the Act mentions that ‘the appropriate government and local authorities shall establish, within the area or limits of a neighbourhood, a school, where it is not already established, within three years from the commencement of the Act. Further, the Act places a compulsion on the state to ensure that no child from the weaker sections or disadvantaged groups is discriminated against in any manner or prevented from pursuing and completing elementary education. To address the issue of seasonal migration for varying periods, States are using various strategies which are supported by Govt. of India under Samagra Shiksha. All States and UTs are required to conduct household surveys/ update household surveys annually to identify out-of-school children. These surveys also collect information on children affected by the migration of their families. To ensure the provisions of elementary education to these children, various interventions are supported under Samagra Shiksha such as the provision of seasonal hostels/ residential camps in villages during the period of migrations of families, residential and non-residential special training centres for out-of-school, dropout and migrant children, besides provision of mid-day meal, free textbooks and free uniforms as per norms of the scheme (Bureau, 2019). The Wire (07 June 2019) reported that there is an urgent need to work on our educational provisions and make them flexible for the seasonal migrant population. There is not enough official data on seasonal migrants’ people. But it estimates that short-term migrants in India vary from 15 million to 100 million. The lack of adequate data makes

it difficult to even start a discussion on this issue. Seasonal migration causes a strange kind of drop-out, which is not captured by conventional ways of looking at the problem. It is possible for these children to be enrolled in schools and to attend for the first few months of the school session (i.e. July to October), but to them drop out for the remaining months to accompany their parents to migration sites. By the time they return the following April to May, the school session is already over. Thus these children have the strange, Predicament of having their names on school registers, but dropping out for part of the year. Over time, the learning deficit this causes gradually leads them to drop out of school completely.

Global Education Monitoring Report, 2019 of UNESCO mentioned that literacy levels in rural households of India dip with seasonal migration. UNESCO report also says that 80 per cent of seasonal migrant children in seven cities lacked access to education. It is clear from the report that, bringing out the educational challenges thrown up by migration. In our country, seasonal migration comprises a portion of the population moving from rural to urban and rural to rural areas for a duration of a minimum of four months annually. It is very high in both urban and rural areas due to the lack of employment opportunities at the residence place which forces families or individuals to move. The majority of those natives are either semi-skilled or unskilled. Generally, the family migrates as a full unit as parents do not want to leave the children behind in the villages due to their safety and security. As a result of this, the well-being of every migrant child gets highly compromised, because there is no effective system in the community or at the school level to maintain data on seasonal migrant children. States like Gujarat, Rajasthan, Maharastra, Odisha, Andhra Pradesh, Tamilnadu, and Karnataka already have taken initiatives to develop a method to track migrant children for interstate coordination to ensure continuity in education in India. On the other side, Uttar Pradesh, Bihar, and West Bengal (WB) are not attentive to the issues of education for children affected by seasonal migration.

OBJECTIVE

To study the context of the seasonal migration and violation of educational rights of children in Bankura District, West Bengal, India.

METHODOLOGY

The researchers have employed a Qualitative inquiry method for collecting data. The study focused on the specific migrants of the Bankura District. Data have been collected from different groups from three blocks (Khatra, Indpur, Ranibandh) of Bankura District. Simultaneously from each block two groups (8-10 labours, both male and female included) were involved as participants in this study. All of them were the migrant workers who use to engage themselves in the paddy and potato cultivation process of the different blocks of two districts Burdwan and Hooghly. The data were collected through an open-ended Interview schedule. The data have been collected by asking

questions and the responses have been recorded in an audio recorder. Along with the specific questions, members of different groups of migrants were also interviewed informally and recorded data were transcribed into text for analyses.

FINDINGS

The Present study is an in-depth investigation in Bankura district, one of the poorest districts in West Bengal, as a case for exploring the context of seasonal migration as a measure of livelihood. Generally, migration is of two types i.e. external and internal. Here, internal migration is the prime concern which is confined within the state of West Bengal in a specific time from Bankura to Burdwan and Hooghly districts. This seasonal migration is inter-district migration by its nature. This inter-district seasonal migration is too much purposive for the last two decades in our state. Migrants have been engaged as labour in paddy and potato cultivation neither construction nor industrial activity.

Bankura district is located in the western part of West Bengal. There are numerous groups of hills and isolated peaks in this area which form the eastern fringe of the Chotanagpur plateau and most of the district is known as 'Jungal Mahal' in the state WB. The district is in dry climatic conditions and a vast wasteland. This land is important for its natural beauty with an undulating surface, laterite soil, and mixed deciduous forest, water reservoirs are there because irrigation is the only source of water for agricultural activity. Due to the presence of dense and scattered deciduous vegetation, it is used as an elephant corridor between the Dalma region and Damodar Valley. As a whole, it is a place of interest for tourists, who prefer to spend in an offbeat location. The demographic feature is also a little bit different and interesting. The population proportion to the West Bengal population is 3.94 per cent only. As per the 2011 census, 91.67 % population of Bankura districts lives in villages. The sex ratio is 956 females per 1000 males. If child (0-6 Age) sex ratio data of Bankura district is considered, the figure is 947 girls per 1000 boys. The average literacy rate of this district in 2011 was 70.26 compared to 63.44 in 2001. If things are looked out at gender-wise, male and female literacy were 80.05 and 60.05 respectively.

From the qualitative analysis of the audio-recorded data, it has been found that seasonal migration is a very common event in the socio-economically marginalized group, generally the SC and ST population of the district. The study shows that around 74 per cent of migration is to meet the food crisis. In winter, for potato cultivation and in summer, for paddy (Boro) cultivation, they migrate to 'POOB' (the east) with all the family members. It has been found that the migration occurred in the following blocks of Bankura district – Bankura –I, Sarenga, Ranibandh, Khatra, Raipur, Indpur, Hirbandh, Saltora, and Chatna. The participants have been inquired for a depth understanding of the socio-economic background of the migrant workers. The most common reason is to meet the food deficit in families. But now the numbers of families are very small in number with respect to the last ten years, due to the several social schemes run by the Central

Government and State Government parallel. On the other hand, introduction of modern machines in the field of paddy and potato harvesting phase. Migration in this district is a painful deal of labour outside his/her place of living for a period of 15 days to 6 months in a year, which is influencing his/her family and social life also. Migration is mostly with family members, leaving behind one or two members to take care of the household, and domestic cattle. Employment is mostly in the unorganised sector as labourers with individual owners as providers of work. Wage is Rs. 200/- to Rs. 250/- in cash and 2 kgs. of rice per day. Besides the wage temporary shelter or shelter-construction materials (bamboo, straw etc) and fuel are provided by the employer. Sometimes one side fare is provided during kharif paddy transplantation by the employer. It is also found that regular school education of the children is seriously hampered. While responding to the issues allied with their seasonal shifting experiences, several interesting incidents have been reported through their words such as engaging children in their employers' (Manibor Babu) house as helping hand homemaking.

DISCUSSION

Agriculture in general also attracts huge numbers of migrant labour all over India (Smita, 2008). The District Human Development Report-Bankura (2007) stated that the most common reason was to meet the food deficit in the families. Sample survey showed (as reported in the DHDR-B, 2007) that around 84 per cent of migration is to meet the food crisis, 10 per cent migrate to meet other family needs, 4 per cent migrate as additional working hand in the families, 1-2 per cent has to migrate if there is a serious natural calamity and the most common calamity in the area is drought. This scenario has been changed due to the several schemes of central and state Govt. in those areas. According to Rajan and Rajput (5 June 2023), migrant children face unique challenges due to their migration pattern, spatial context and socio-economic conditions. They also stated that addressing their educational marginality and right to education is complex and challenging for our society. Children are forced to migrate with their families and therefore, they remain isolated from studies and schools (Maji & Sarkar, 2017). Roy et al. (2015) explored the impact of short-term labour migration of parents on regular school attendance of children between six to fourteen years and their dropping out from school through an analysis of the cases from both ends of migration flow in India. Ghosh & Mal (2017) reported that the child literacy rate is not good and the dropout rate is high due to the seasonal migration in the southern part of Bankura district. They also mentioned that seasonal migrant families are bound to promote child labour during their shifting period from their native place. Migrant children have less possibility to complete schooling and to advantage of government policies and programmes, found by Rahman (8 April 2023). Present researchers observed that the children are losing their formal education throughout the year at the cost of the livelihood of their parents.

RECOMMENDATION

Social Policy Research Foundation (17 July 2021) reported that a nationwide database on seasonal migration and its consequent effects needs to be created on an urgent basis. States should require to compose migrant portals about data on in-and-out migrants and their families. Rajput & Verma (2018) agreed that, due to the lack of an effective scheme both at the source and destination locations, the continuity in education for seasonal migrant children gets affected. Thus, these children do not gain the required skills and abilities at the right time. Keeping in view the present scenario of these educationally deprived children, the total solution cannot be prescribed, but at the same time, there should be several sorts of way-out of this regrettable condition. (i) Joint Steps by State Govt. and UNICEF - A strong database is required to realise the actual scenario of migrant children in both the location of immigrants and emigrants sites. There is no authentic data available, migration has been observed in several blocks of Bankura district – Bankura-I, Chhatna, Saltora, Indpur, Ranibandh, Hirbandh, Khatra, Raipur, Sarenga (Dist. Human Development Report- BANKURA, 2007). The Wire (2019) also stated that the Lack of adequate data makes it difficult to even start a discussion on this issue. Before doing a proper plan local authorities and Govt. should take into consideration their target group in those pockets of Burdwan & Hooghly dist. (ii) Migratory Hostel - According to Reed (2014) migratory hostel program in Rajasthan, run by SarvaShikshaAbhiyan is the most effective but simple strategy for universalizing elementary education in India. In this scheme, migratory children are allowed with their parents to stay in the primary school building for the sixth-month migration period. SSA provides wardens for those children hired from the nearest community. There is a provision for the establishment of migratory and seasonal hostels like in Rajasthan and Odisha respectively. (iii) Winter Camps - Like Summer Camp in our country, Winter Camps can also be organized, as the active season in seasonal migration is November to February. In these camps, mainly necessary and practical day-to-day education like arithmetic, science, health and hygiene etc. can be provided either by some organization or some wing of informal centres of Sarba Shiksha Abhiyan. (iv) Role of Teacher Education Institutions - All the teachers' training institutions in those areas of Burdwan and Hooghly districts can make a plan for their trainees to conduct community outreach activity and submit a project report on the education of those migrated children. The assignment will cover the teaching-learning activities, and assessment according to children's age group. This kind of initiative minimizes the educational crisis of migrated children in those areas. (v) Mobile school – If the child is not going to school, then we will bring the school to the child, which is named as mobile school. Presently there are 56 mobile schools in 29 countries. Such a type of Mobile School system can be adopted or may be introduced here to educate those children (Majumder, 2008). A beginning was made under the SSA through Mobile School. The provision of a mobile teacher along with the migrating families & children would have been a better solution but its operational viability is questionable (Deep, 2017). NGOs can go forward to those areas of Burdwan and

Hooghly districts on regular basis classes can be conducted there. There should not be any stipulated curriculum or time for the transaction, but a strong foundation of faith in one's ability, self-confidence and motivation may be easily generated through this endeavour. (vi) Flexible Education Provisions – In the field of paddy and potato are a seasonal job lasting from November to February, therefore, owing to migration, the wards are to drop out the major portion of the academic year. Moreover, even if the workers are keen on putting their wards in schools located in the neighbourhood of the shifted house in Burdwan & Hooghly, they could not do so because the transfer certificates would be hard to get. Hence, issuance of transfer certificates should be made available easily so that children can enter the classroom and take transfer whenever necessary for further admission to the schools of their native places of Bankura district. (vii) Night School - As most of the activity in the paddy and potato field are done within daylight and as the working parents and their children are not interested to attend school during their working hours, some sort of night schools can be organized by NGOs in the nearby cluster of the village areas, where both children and their parents can be specified minimum education for necessary hygiene and livelihood techniques.

CONCLUSION

In this prevailing socio-economical perspective, to make 'inclusive education' really 'inclusive' there is an urgent need to look into the settings of children of migrant workers who are economically weaker and marginalized in the society so that they must be included in the education system. To include these excluded children, several strategies ought to be adopted for providing opportunities and access to education to those excluded children and their right to education be ensured. To confirm the educational provision for all migratory children, the state government should have a detailed account of their number and an understanding of their location of presence.

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**DIVERGENCES BETWEEN SRI SRI VIDYA MANDIR SCHOOL
AND OTHER SCHOOLS CONCERNING HOLISTIC EDUCATION -
A CRITICAL ETHNOGRAPHIC STUDY**

Soma Gol

Assistant Professor, B.Ed. Section, Kalna College,
Purba Bardhaman, West Bengal.

Dr. Biswajit Chatterjee

Assistant Professor, Department of Education, Raiganj University,
Uttar Dinajpur, West Bengal.

ABSTRACT

The ‘Critical Ethnography’ is a paradigm of ethnographic studies where the nearby places, dwellings, family situations, formal and informal establishments are studied. The Chicago school of sociologists introduced this in the 1930’s. In this study, a divergence was presented between Sri Sri Vidya Mandir School, Jharkhand and some other schools of West Bengal, keeping in view the Holistic Education pattern like its facets, facts, educational patterns, co-curricular activities, relationships among all stakeholders and values, enshrined in those institutions. The objective of the study was to compare some selected schools of West Bengal including of RKM background schools with Sri Sri Vidya Mandir School. ‘Critical Ethnographic Research’ under Qualitative Research was adopted in which the interview and participant’s observation techniques were used to study the Holistic Education. Sri Sri Vidya Mandir School from Jharkhand and 8 Bengali medium secondary schools from West Bengal were purposefully selected from eight different randomly selected districts. A total of 24 teachers & 20 students from both ends were interviewed for this study apart from the observation techniques in those schools. The study revealed that Sri Sri Vidya Mandir School is very much unique in its nature compared with the other schools concerning Holistic Education. The study also revealed that except the RKM contextual schools, all other schools are lacking in most of the bases or characteristics of Holistic Education.

Keywords: Sri Sri Vidya Mandir School, Holistic Education, Critical Ethnography

INTRODUCTION

Ethnographic research usually takes a cultural lens and deals with the exploration of people’s lives and the diversity of human cultures within their communities in their particular cultural

settings. It developed in early anthropological field research and was carried out in non-western cultures. In the 1930s, the critical Chicago school of sociologists introduced a new paradigm of ethnographic studies, where they started to explore their own nearby corners just as if they were unknown places (Carspecken & Apple, 1992; Thomas, 1993). Currently, the topics of ethnographic research can be anywhere, including familiar settings, including formal and informal organizations such as workplaces, educational institutions, social organizations, fan clubs, trade fairs, shopping centres and even social media. This paradigm of ethnography is better known as Critical Ethnography (Creswell, 2007).

Sri Sri Vidya Mandir Schools are the cluster of schools under Sri Sri Ravishankar Vidya Mandir (SSRVM) Trust as one of the educational wings of the Art of Living (AoL) organization to promote holistic education in a stress-free and child-friendly environment. The present researcher particularly selected Sri Sri Vidya Mandir School of Hendaajuri, Ghatsila in the state of Jharkhand, under the Tribal School Project of Vyakti Vikas Kendra India (VVKI), an initiative by the Art of Living (AoL) Organization. Here, 'Sri Sri Vidya Mandir School' is used by the researchers as the simplified nomenclature of 'Sri Sri Vidya Mandir School of Hendaajuri, Ghatsila in Jharkhand' in some parts of their writings. Sri Sri Vidya Mandir School of Hendaajuri is mainly educating the tribal community of the area. Uneducated and illiterate, tribal people found the languages, laws and regulations, economic transactions, and the intact way of conducting life completely unfamiliar and several persons lost their land. So, it seems that the 'developments' introduced or affected upon them are meant to benefit the 'outsiders', at the expense of the indigenous tribal community. Life for them will never go back to the old way ("Seva Mandir Projects", n.d.).

Holistic Education simply means cultivating the whole person and helping individuals live more consciously within their communities & natural ecosystems. This education is interested in cultivating spirituality, reverence for the natural environment & a sense of social justice. It also seeks to inspire children's creativity, thoughts, compassion, self-knowledge, social skills, arousal of democratic awareness and emotional stability (Miller, 1990). A divergent study was aimed between Sri Sri Vidya Mandir School and some other schools of West Bengal, keeping in view the Holistic Education pattern like its facets, facts, educational patterns, co-curricular activities, relationships among all stakeholders and values, enshrined in those institutions.

RESEARCH QUESTION

How is Sri Sri Vidya Mandir School distinctive from other schools concerning Holistic Education?

RESEARCH OBJECTIVE

To explore and compare Sri Sri Vidya Mandir School with other schools concerning Holistic Education.

METHODOLOGY

‘Critical Ethnographic Research’ under Qualitative Research was adopted in which the Interview and Participant’s Observation techniques were used to study Holistic Education in Sri Sri Vidya Mandir School of Jharkhand and some other schools in West Bengal. After reviewing the existing related literature some characteristics or bases were finalized. The data for this study were collected from Sri Sri Vidya Mandir School, Hendaajuri, Jharkhand and in West Bengal, that data were collected from 8 Bengali medium secondary schools, among those 4 schools were from Ramakrishna Mission (RKM) background. These schools were purposefully selected from eight different randomly selected districts of West Bengal namely, Purba Bardhaman, Nadia, Murshidabad, Bankura, Purulia, Birbhum, Howrah and Hooghly. It is here also to be mentioned that, for better comparison regarding the bases of holistic education, these schools were selected in view of their variations in their last board results and keeping in mind the quintessence and comparability provision relating with Sri Sri Vidya Mandir School. At the outset, 12 secondary school teachers and 10 students were randomly selected for interviews from Sri Sri Vidya Mandir School and another 12 secondary school teachers and 10 students were randomly selected for interviews from 8 different Bengali medium secondary schools of the districts mentioned above. At the same time, these selected schools were observed also in this research. From both states, 24 teachers & 20 students were interviewed for this study which accounts altogether of 44 participants, which is sturdy enough, according to the researchers, for any qualitative research to proceed & to obtain a finer result or better suggestion. Three standardized tools were used in this research. Two interview schedules were developed and used for students and school teachers respectively along with an observation schedule for participatory observation. As per the essence of qualitative research, content analyses were followed thoroughly.

FINDINGS

From the analyses of the entire transcribed interview data from the teachers & students of Sri Sri Vidya Mandir School & other schools including some RKM contextual schools and also the observed data observed extensively by the researchers in Sri Sri Vidya Mandir School & other schools regarding the bases of Holistic Education, the following findings were revealed. Here all the categories from both ends are generated & presented from the interview data and the observation data are also indicated side by side for the purpose of comparability.

Table 1 : Corroborated Findings regarding the Comparability between Sri Sri Vidya Mandir School and some other schools regarding the Bases of Holistic Education			
Generated Categories from Interview Data of Sri Sri Vidya Mandir School	Generated Categories from Interview Data of Other selected Schools	Generated Observation Data of Sri Sri Vidya Mandir School	Generated Observation Data of Other selected Schools
Community/Global Connectedness			
Connection with the Community	Communiqué with Parents	<ul style="list-style-type: none"> • Different Programmes are organized with cooperation & participation with nearby schools. • Parent Teacher Association is there. 	<ul style="list-style-type: none"> • Communication with other nearby schools during only board exams and public celebrations. • Some schools do have not that communication also. • Some schools have strong PTA with conscious guardians but others are not much mindful of that. • Short excursion is organized in some schools. • Other only implements government orders.
	Tangential Activities	<ul style="list-style-type: none"> • Teachers maintain communication with every guardian on regular basis. • School organizes social awareness Programmes in nearby villages. • School arranges excursions at colleges, universities and Ashram every year. 	
Emotional Stability			
Emotional Balance	Deficient Mental Support	<ul style="list-style-type: none"> • Students take midday meals in the queue with patients. • They help each other to take their meals. • Teachers help students with stress. 	<ul style="list-style-type: none"> • In most of the schools except RKM schools' students are undisciplined in a queue. • Teachers have to use a stick or so to stare them in those cases.

Mental Stability	Mediocre Emotional Poise	<ul style="list-style-type: none"> • Teachers suggest techniques to overcome stress. • Students like to face challenges. • In problematic situations, teachers empathically help students to overcome. 	<ul style="list-style-type: none"> • Exam-time stress is prevalent for some students. • Excluding some insensible teachers, teachers & Maharajs are helpful in this regard. • Except few evading teachers, teachers & Maharajs help students in their problematic situations.
Self-Consciousness			
Education on Democracy			
Participatory Democracy	Democratic Practice	<ul style="list-style-type: none"> • Class council & school council are very active. • Election of a class monitor is followed through the democratic process. • Students are familiar with the preamble of the Indian Constitution. • Learners express their opinion freely in classes. • School curriculum provides the notion of democracy. 	<ul style="list-style-type: none"> • No active school councils or class councils in some schools. • Some schools have both school councils and class councils. • Selection of class monitor is followed through a democratic and/or autocratic process. • Teachers usually do not allow students to express their opinion freely in some schools. • The compositions of several classes are still teacher-centric. • School curriculum provides the notion of democracy.
Good Citizenship	Freedom of Choice		
Freedom of Choice			

Value-based Learning			
Moral Development	Flux of Values	<ul style="list-style-type: none"> • Practices of Prayer, Yoga & Pranayama. • In daily prayer, famous quotations and spiritual dialects of educationists, philosophers, and spiritual gurus are read 	<ul style="list-style-type: none"> • Practice of Morning Prayer at the beginning, in each school. • Yoga and Pranayama are practiced in few schools. • But few teachers & students are seen coming after the prayer in some schools.
Escalation of Values	Distrusting Morality	<ul style="list-style-type: none"> • Petite quiz questions are asked in the morning assembly. • News highlights are presented in the morning assembly. • The prayer is ended with the singing of the National Anthem. • Teachers & learners participate in religious occasions. • Students follow school rules & regulations efficiently. • Students are not in the practice of telling lies. 	<ul style="list-style-type: none"> • Students & teachers participate joyfully in religious occasions except for some students of their guardians' prohibition. • Students follow rules & regulations with some exceptions from time to time. • Interestingly, sometimes teachers do not abide by the rules in the schools. • Some students practice telling lies. • School library is quite non-functional except for the RKM schools.
Character Building	Character Shaping	<ul style="list-style-type: none"> • Student has the habit of reading story books and Classics. 	<ul style="list-style-type: none"> • Some students read Classics & story books through the influence of their guardians. • Very few teachers encourage students to read story books.

Peace Education			
Culture of Peace	Nonviolence Oblique	<ul style="list-style-type: none"> • Corporal punishments are prohibited. • Teachers used to make them understand what they should or should not do. • If punishments are rarely given, it is given in the form of academic activities. 	<ul style="list-style-type: none"> • Students are unmanageable in some schools. • In some cases, teachers have to give physical punishment to some errant students. • Self-discipline is not followed by the students in some schools.
Self Help	Practice of Peace	<ul style="list-style-type: none"> • Students usually pursue the practice of self-discipline. 	<ul style="list-style-type: none"> • Students quarrel quite naturally with each other. • And then they go to complain to teachers.
Sustainable Outlook	Sustainability	<ul style="list-style-type: none"> • They quarrel quite naturally with each other but not too extensively. • Teachers seldom intervene in resolving quarrels. • Bullying is totally absent. 	<ul style="list-style-type: none"> • Class monitors cannot control the class properly. • Only in girls' schools and in RKM schools these situations are not too bad.
Learning of Social Responsibility			
Social Responsibility	Social Erudition	<ul style="list-style-type: none"> • Learners feel that all religions are the same. • According to them, the basic beliefs of all religions are doing well for mankind. • They take active participation in the social gatherings of all religions in school and also in the community. 	<ul style="list-style-type: none"> • Differences between dissimilar religions exist amongst some students. • Some students are flexible regarding diverse religions. • The spirit of cooperation is upbeat amongst the students, especially in RKM Schools.
	Shared Accountability		

Environment Cognizant	Ecological Awareness	<ul style="list-style-type: none"> • They help each other in every daily assignment. • They gladly do their duty also. • Teachers & students are concerned about the environment. 	<ul style="list-style-type: none"> • Students are not much aware about the environment or the environmental issues of present period. • Gardening & cleaning in the campus are also not followed by every school except the RKM schools.
		<ul style="list-style-type: none"> • They organize environmental awareness Programmes with the active participation of nearby villagers. 	<ul style="list-style-type: none"> • But some schools are constantly following the process of cleaning & gardening like RKM schools.
		<ul style="list-style-type: none"> • School organizes debates and discussions about environmental consciousness among students each year. 	<ul style="list-style-type: none"> • In those schools, students are also very mindful about caring for their schools' premises.
Compassion/Empathy			
Sensitiveness	Incomprehension	<ul style="list-style-type: none"> • Teachers and students do their duties faithfully. • They are very much loyal to their institution. It's like a <i>Mandir</i> to them. • Students are dependent on their teachers for academic requirements and social & emotional support. 	<ul style="list-style-type: none"> • Some students are loyal to each other. • They are devoted to their school also. • But not everyone is truthful. • Some teachers & Maharajs are also very faithful about their duties to their students and schools. But few teachers are very laid-back.
		<ul style="list-style-type: none"> • Teachers help their students in a troublesome situation. 	<ul style="list-style-type: none"> • Some teachers & Maharajs are helpful in students' troubled situations.

Judicious Notion	Commiseration	<ul style="list-style-type: none"> • Students used to share story books among themselves. • On some special occasions, they share homemade special foodstuffs with their friends, irrespective of religions, race and creed. 	<ul style="list-style-type: none"> • But few teachers don't want to take any responsibilities. They just want to inform their guardian first. • Students love to share foods, books, pen etc. with their friends with some exemption.
Empathetic	Compassion		

DISCUSSION

It was comprehended that where Sri Sri Vidya Mandir School maintains the community/province connectedness effectively with the limitation of global connectedness, but the other selected schools, in regards of communication with other schools or communities, a mixed result among the schools were recorded. It was also found that a well-balanced emotional stability is being maintained for students and teachers in Sri Sri Vidya Mandir School, whereas keeping in mind some observed bipolar characteristics among those selected schools it can be concluded that in some of the schools the bases of emotional stability is maintained especially in RKM background schools but in rest of the schools, it is little of lacking. It was also found that in Sri Sri Vidya Mandir School, the democratic practices or the education on democracy is generously imparting towards the students and in most of the selected schools also the democratic attitude is mirrored. The invaluable component, value-based learning was being highly incorporated towards the students of Sri Sri Vidya Mandir School. However, with some glitches, value education is being imparted to the students of other selected schools also, especially in RKM background schools. Through some insignias it can be assumed that the culture of peace education is well cultivating in the Sri Sri Vidya Mandir School but in other selected schools except in RKM background schools, partly of the peace education is inculcating towards their students. The results from both sides of findings signify that among several of the characteristic features of learning social responsibility a few were lacking in Sri Sri Vidya Mandir School & as well as in other selected schools but some of them are also observed adequately. The attribute compassion/empathy was also accounted through interviews as well as effectively observed in Sri Sri Vidya Mandir School by the researcher. But some incomprehensive as well as commiserative behaviour were noticed in other selected schools in West Bengal. But the results were quite good in RKM background schools.

CONCLUSION

Sri Sri Vidya Mandir Schools run all over India, which is the educational philosophy of Sri Sri Ravi Shankar under the Art of Living (AoL). This study only tried to provide a verification of various bases of holistic education in the educational setting and helps us to understand how these bases in educational setting might encourage higher trust and better performance for the schools. Every research study is expected to add some content to the field of knowledge, the theory building or practice in educational set ups. The present study also hopes to make its humble contribution in some way. The first and foremost insinuation will be that people from different domains will know about Sri Sri Vidya Mandir School under the aegis of Art of Living (AoL) foundation, the schools which are providing completely free education, food, admirable culture, valuable values and quality holistic education to the underprivileged tribal communities. The study reveals that in our curriculum of secondary schools, there are a very a smaller number of units which brings the message of these bases of holistic education. Therefore, researchers concluded that proper steps should be taken in development of the curriculum so that it can make students more holistic.

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Book Review

**NATIONAL DISASTER MANAGEMENT GUIDELINES :
MANAGEMENT OF URBAN FLOODING**

A PUBLICATION OF THE NATIONAL DISASTER MANAGEMENT AUTHORITY,
GOVERNMENT OF INDIA

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Dr. Subrata Biswas

Assistant Professor

Ramakrishna Mission Brahmananda College of Education, Rahara, Kolkata-700 118

INTRODUCTION

It is a useful document to realize the necessity of planning and management of urban flooding, especially in the era of globalization. Flood is a major concern in India. The National Disaster Management Authority (NMDA) has considered the matter seriously. Previously disaster management has largely focused on riverline floods in rural areas but now special focus has been given to resolve the problems associated with urban floods from economic to epidemic. Factors contributing to urban flooding have been very appropriately presented through a tabular form for further course of action. Statistical data has always been effective in drawing up plans for management programme.

With the cooperation of NMDA, management programs will implement the policies of prevention and recovery. The nodal ministry and other ministers and departments will address specific disasters as assigned to them. Keeping in mind the various issues the strategies are planned out. Science and Technology play a significant role in monitoring and forecasting it. Thereby it will act as a decision support system. By setting up a vulnerability based geospatial framework the preparedness of urban flooding may be improved. Establishment of local networks for real time rainfall data will be accorded the highest priority. Doppler Weather Radars will be calibrated with real time rainfall data from local networks. After the generation of the flood forecast the disaster management can characterize the flood severity and implement the associated flood management plan. The ultimate objectives of urban flood management are to provide ways and means to deal effectively with the possible flooding in urban areas. Success of such a system is closely related to an individual's knowledge of flood risk and their familiarity with emergency response procedures.

BRIEF SUMMARY

However, the density of population and drainage system in urban areas has become a challenge. So, the development of an adequate and functioning drainage system has been taken up as a prime concern. A strong resolution has been taken up of desalting all major drains by March 31 each year. Completion of work will be certified by local authorities. Thus, a master plan has been prepared for desalting including an adequate budget to carry out all these operations along with manpower. Along with urbanization, many bridges have been constructed and many more roads and bridges should be constructed in such a manner that it should not block the drainage systems thereby stopping backwater effects. Special importance will be laid upon areas that are needed to be made flood proof such as Airports.

Rain water harvesting will be carried out to lower the peak. Basic intention is to create an engineered terrestrial ecosystem which has significant aesthetic value. In this case rain gardens have been considered as effective measures for storm water management programmes. Urban storm water management system will include detention and retention facilities to come over the negative impact of urbanization and storm water drainage through integrate planning and coordination. Special attention will be laid on cities located near coastal areas and near river banks. It has been observed that development cannot be sustained unless disaster mitigation is integrated into the planning and development process. The hydrologic and hydraulic characteristics of different risk factors have been considered to be an integrated manner by the management. Models will be provided regarding the information about expected flood frequencies and magnitudes. Flood hazard assessment will be made for standard baseline conditions to ascertain level of risk of flooding on the basis of projected future scenario of rainfall intensities. Cost saving due to reduction of flood damage must be compared with the cost of implementing flood management measures. The development impact assessment and emergency response management system is used for generating early warning based impact assessment scenarios for response planning. Authorities will work out micro level analytical tools with appropriate interfaces. The responsibility of maintaining the information will be shared between different organizations. The process of managing flood will comprise of the documentation of the problem, setting up flooding standards and preliminary goals. The involvement of stake holders will enable profound understanding of flood risks, the community needs and the identification and implementation of flood management measures.

CRITICAL ASSESSMENT

The growing awareness over the years on environmental protection and sustainable development has further laid emphasis on sound environmental management practices. Planning and developments are state subjects and therefore the development in the states is based on the

legislative support as applicable in that state. There should be restrictions of building activity in the vicinity of certain areas especially nearby water-bodies. An incentive should be provided to the owners interested in undertaking of recycling of waste water and rain water harvesting structures. Response measures were taken immediately prior to and following an event and it became very crucial in saving lives and protecting property because flooding has localized impacts on commercial, industrial and institutional areas. Thus, Disaster Management Plan is very important. Officers-in-Charge of drainage and sewerage will be part of the Incident Response team. The National Disaster Management Guidelines on incident response system is prepared and updated by the NMDA. On emergency situations, evacuation will be carried out at shortest notice and may continue as severity increases. Additional temporary arrangements may have to be planned depending upon local conditions. Community level teams will play an important role in planning and assisting in them and work in coordination with the official machinery. Urgent steps should be taken to restore water supply on war porting after the event. Children, Women, the aged and differently-abled will be given special attention. Periodic simulation exercises and work drills will be organized and made mandatory on the lines of pilot initiations of NMDA for ensuring effective functional emergency response along with the inventory of community resources and assets. There is a major gap in the number of fire stations, firefighting and rescue equipment and trained personnel.

Design and development of relevant educational and communication campaigns and launching them from time to time is important. This will manifest itself in better and timely strategies for disaster risk reduction. NMDA has for the first time decided to address urban flooding as a separate disaster, delinking it from floods. Therefore, this book has potential impact on its readers.

CONCLUSION

The National Guidelines for Management of Urban flooding have been formulated by taking every precautionary steps required, even on the basis of economic or social ground. The process includes a vast field of science, technology and humanities. Incorporation of different fields of work will lead to success. The book contains all the details required by planners including statistics and research table. The process of evolving the National Guidelines for management of urban flooding has been very challenging. Through the early warning system and communication, the challenge will be easily overcome. Careful monitoring and maintenance will strengthen the hands of NMDA. Proper measures from every aspect of life have been introduced to rescue humanity.

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