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Dear Readers!

India is at the crossroads as it reels under the painful process of being bailed out of COVID-19 pandemic. The hundreds of deaths and cremations daily, the thousands of humans languishing in corona fever and physical ailments, the long queue gasping for breath and hence waiting for the connection of Oxygen cylinders, the number of families burdened with members having been admitted in the hospitals for treatment, the elders who are in the grip of corona –psycho threat etc. are the day-to day experiences. The consequences are the restricted movements of peoples, closure of business centres, long stretch of lockdown, confinement of humans in the houses, emergence of online classes and exams and so on.

Reflecting on the concerns of educational institutions, online classes have become the order of the day, distancing the students from the face to face instructions; though fortunately the Government has issued free SIM cards with free Wi-Fi internet facilities which ensures the connectivity for the classes, on the other hand, the interactions have been drastically reduced and students are slowly becoming inactive. Faces of the students are rarely seen but the faces of parents seem to be appearing and listening to the voices of the staff…Congrats to elders becoming the students through online out of curiosity. The instructors too seem to have settled down for care-for-nothing, not worried about the presence or absence of students; they are ignorant of new techno-pedagogy but only the completion of the syllabus with minimum power points and finally the apex body worried about the formal completion of end evaluation process in a smoother manner. While we understand the difficulty in all the aspects, including the fast spread of pandemic and the need for lock-down, how are we going to justify the even-tempered attitude of ours if we insist on quality education? What do we have to do? There are questions to be answered.

I think, somewhere we need to touch the core of the educational system where a thorough overhauling has to be done. A new perspective of education which encompasses the radical inclusion of information technology from the elementary education for both teaching and learning has to be thought about so that our students become acclimatised to techno-oriented teaching- learning process along with personal reading and reflections. This demands a deep evaluative study of our system and openness to the new developments in the area of interactive teaching-learning process; becoming techno-savvy is indispensable and the rural student community has to be focussed and enriched in technology. Especially the tertiary education has to be rejuvenated with techno-centred interaction in the classrooms. Let us hope, this pandemic will bring about a change in the days to come.

As usual, we have papers and articles for your reading; keep reading and send your feedbacks to us. We are grateful for the patience of the authors of the papers as it takes more time for publication. This delay is due to the more number of contributions from various parts of our nation. All are duly reviewed in the order and hope to publish them in FCFS mode. Kindly bear with us.

Thank you

Stay safe…take care…help others with what you can.

Editorial Team

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CONTENT

EFFECTIVENESS OF ACTIVITY-BASED LEARNING ON SPATIAL REASONING ABILITY OF STUDENTS IN MATHEMATICS AT UPPER PRIMARY LEVEL

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ABSTRACT

Curiosity is a dominant characteristic of children at the beginning stage of learning. They like activities that are full of energy and love to be involved in those kinds of activity. Activity-based learning provides an opportunity to learn through experience, direct observation and participation of students. Spatial reasoning ability is the capacity to create, maintain, and manipulate abstract spatial images. Without spatial skills, it would be difficult to exist in the world as one would not be able to communicate about position and relationships between objects, give and receive directions and imagine position with respect to shape and size. The researcher in the present study is interested in finding out whether activity-based learning affects students' spatial reasoning ability. This is an experimental type of research with a "randomised control group pre-test post-test" design that used data from 64 class VIII students of Mahavir Middle School, Gaya, India. It reveals that students taught through activity-based learning showed a significant increase in spatial reasoning abilities than students taught through the traditional teaching method.

Keywords: *Activity Based Learning (ABL), Spatial Reasoning Ability, Upper Primary level.*

Introduction

We live on a solid planet in a 3D world. As much of our experience is through visual stimulus, interpreting visual information is fundamental to human existence. We rely on spatial thinking in daily life when we search for specific locations, use representations of space or image. Spatial reasoning abilities are of great importance for success in many fields of discipline. A young learner who cannot clearly express and easily understood can do better with spatial reasoning ability. Having solid skills to picture and manipulate objects in different ways mentally predicts success in science, technology, engineering, and mathematics (Eason and Levine, 2017). Spatial reasoning helps develop numerical abilities such as understanding quantity, numeral identification, counting, place value and arithmetic concepts and skills (Sorby, 2009).

Similarly, when children examine the result of combining two shapes to form a new shape, predict the effect of change in the number of sides of a shape and try to draw a shape after it has been rotated a quarter or half turn. By doing all these, they try to acquire a deeper understanding of shapes and their properties. Such activities promote spatial sense.

Learning activities are based on real-life experience to help learners transform knowledge or information into their ability to apply it differently. According to Churchill (2003), ABL helps learners construct mental models that allow for 'higher-order performance such as applied problem

solving and transfer of information. This approach provides a way to integrate learning within students' knowledge and, by exposing them to various activities, helps them learn. If carried out effectively, these activities develop skills like team-working, communication, design, research, problem-solving, reflection, and life-long learning in the learners. And if all these activities are based on real-life experiences, they can help students apply the same in their practical life and prepare students for future energy.

Background of the study

The spatial reasoning ability is significant since it enables one to imagine figures and think about how objects

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can move and rotate and understand how pieces come together to form a whole. Buckley et al. (2018) revealed in their study that there is a direct relationship between attaining higher levels of spatial ability and performance in mathematics. Similarly, Yarmohammadian (2014) found a positive correlation between spatial relation perception and mathematical ability. The development of this research paper is driven by the belief that spatial reasoning ability has a direct impact on overall mathematics achievement. Hence, there is a need to foster this particular skill through the appropriate teaching methods and experiences. Activity-based learning is one such method where the teacher facilitates the students learning through different activities. Activity-based learning has effectively improved students' higher-order thinking skills (Khan et al., 2012). This learning process provides an opportunity for maximising learning through experiences by direct participation of children in the learning process. The learning process present study is interested in maximising whether activity-based learning affects students' spatial reasoning ability.

Objectives

1. To study the effectiveness of activity-based learning over traditional methods in enhancing students' spatial reasoning ability in mathematics at the upper primary level.
2. To compare the effect of activity-based learning on spatial reasoning ability of students in mathematics with relation to different kinds of learners (among high and low achievers as well as boys and girls).

Hypotheses

1. Activity-based learning approach significantly enhances the spatial reasoning ability of upper primary level learners in mathematics compared to the traditional teaching method.
2. There is no significant difference in spatial reasoning ability of students concerning different kinds of learners (among high and low achievers as well as boys and girls) at the upper primary level.

Methodology

Research Method : The present study is an experimental type of research with a randomised control group pre-test post-test" design. The students are assigned into two equivalent groups, one experimental and another control group, following randomisation. The 'Activity-based learning strategy' serves as the independent variable, whereas the 'Spatial reasoning ability in mathematics' is the dependent variable in this study.

Population and Sample : Upper Primary government schools of Gaya district in the state of Bihar constituted population. All the 64 students of class VIII of "Mahavir Middle School, Gaya" in the community of Gaya are taken as sample. To examine the hypothesis of the study, the school was selected purposively. The researcher divided the total students of class VIII into two equivalent groups based on their roll numbers, i.e. 32 students with even roll numbers were selected in one group as an experimental group, and 32 students with odd roll numbers were selected in another control group.

Tools Used : The investigator used two different types of tools to conduct the study: -

Measuring Tool : The teacher made achievement test was designed to measure student's spatial reasoning ability in mathematics on the topic "SOLID, AND IT'S SHAPE" for class VIII students. It was constructed and standardised by the investigator based on the blueprint.

Instructional Tool : The instructional tool consists of lesson plans and activities developed on different topics and sub-topics of the unit "SOLID, AND IT'S SHAPE", keeping in view the students' need.

Analysis of Data

Table 1

Descriptive Statistics of the Pre-Test Score of Control Group and Experimental Group

Statistical measures	N	Mean	Median	SD	Minimum	Maximum	Skewness	Kurtosis	Standard Error of Mean
Pre-test (Control group)	32	10.16	10	3.539	5	19	0.817	0.335	0.626
Pre-Test (Experimental Group)	32	10.38	9.5	3.415	6	18	0.694	-0.48	0.604

From table 1, it can be concluded that the pre-test scores of the control and experimental group are moderately skewed as the value of skewness is between 0.5 to 1.0

and having low standard variability. The mean pre-test score of the experimental group is slightly more than the mean of the control group. Hence, it can be concluded that there is no visible difference between the pre-test scores of both groups.

Table 2

Descriptive Statistics of The Post-Test Score of Control Group and Experimental Group

Statistical measures	N	Mean	Median	SD	Minimum	Maximum	Skewness	Kurtosis	Standard Error of Mean
Post-test (Control group)	32	12.34	12	3.507	7	21	0.537	0.105	0.620
Post-Test (Experimental Group)	32	18.28	18	3.448	11	25	0.063	-0.499	0.609

From table 2, it can be concluded that the post-test scores of both the control and experimental group are slightly skewed as the value of skewness is between -0.5 to 0.5 and having low standard variability. There is a visible difference between mean post-test scores of both the group, indicating that the average post-test score of experimental group is higher than that of the control group.

Testing of the Hypotheses

Research hypothesis : Activity-based learning approach significantly enhances the spatial reasoning ability of upper primary level learners in mathematics compared to the traditional teaching method.

Null hypothesis : There is no significant difference between the activity-based learning method and the traditional teaching method in improving the spatial reasoning ability of learners in mathematics.

Table 3

Comparison of Pre-Test scores of Control Group and Experimental Group

Group	N	Mean	SD	Mean Difference	df	Calculated 't'- value	Sig.
Control Group	32	10.16	3.539	0.22	62	0.252	0.809
Experimental Group	32	10.38	3.415				

The table 3 indicates the difference between the means of pre-test of the control group and experimental group is 0.22. For the df 62, the table value is 2.00 at 0.05 level of significance and 2.66 at 0.01 level of significance. The t-value is 0.252, which is not significant at the 0.05 level. Hence there exists no significant difference between the pre-test scores of control group students and experimental group students. Thus, both the control and experimental group are of equal intelligence level.

Table 4

Comparison of Post-Test scores of Control Group and Experimental Group

Group	N	Mean	SD	Mean Difference	df	Calculated 't'- value	Sig.
Control Group	32	12.34	3.51	5.94	62	6.830	0.000
Experimental Group	32	18.28	3.45				

The table 4 indicates the difference between the means of post-test of the control group and experimental group is 5.94. The t-value is 6.830, which is significant at 0.05 levels. Hence, the null hypothesis "there is no significant difference between activity-based learning method and traditional method of teaching in improving the spatial reasoning ability of learners in mathematics" is rejected at 0.05 levels. Thus, it can be inferred that the mean value of the experimental group has increased substantially from M=10.38 to M=18.28. Hence, the initial assumption that the Activity-based learning approach will improve the spatial reasoning ability of students in mathematics in comparison to the traditional method of teaching is found to be correct, and hypothesis-1 is accepted.

Table 5

Comparison of the gain score of the control and experimental group

Group	N	Mean	SD	Mean Difference	df	Calculated 't'- value	Sig.
Control Group	32	2.06	1.8	5.53	62	11.920	0.000
Experimental Group	32	7.59	1.92				

From table 5, the 't'-value is found to be 11.920, which is significant at 0.05 levels. Hence, the gain scores of the experimental group differ significantly from the gain

scores of the control group. It can be inferred that the activity-based learning approach is more effective in improving students' spatial reasoning ability compared to the traditional teaching method.

Null hypotheses : There is no significant difference in spatial reasoning ability of students with respect to different kinds of learners (among high and low achievers as well as boys and girls) at the upper primary level.

Table 6

Comparison of Post-test scores of the experimental group with relation to the level of students

Students levels of the experimental group (Post-test)	N	Mean	SD	Mean Difference	df	Calculated 't'-value	Sig.
1 for low level	24	16.79	2.874	4.96	30	4.317	0.000
2 for high level	8	21.75	2.605				

The table 6 shows 't'-value is 4.317, which is significant at 0.05 level. Hence the null hypothesis "there is no significant difference in spatial reasoning ability of high and low levels of experimental group students" is rejected at 0.05 levels. So, it can be concluded that teaching through activity-based learning helps in improving the achiever's performance compared to the low-achievers performance.

Table 7

Comparison of Pre-test scores of the experimental group with respect to boys and girls

Students gender of the experimental group (Pre-test)	N	Mean	SD	Mean Difference	df	Calculated 't'-value	Sig.
1 for girls	13	9.84	2.983	0.89	30	0.829	0.464
2 for boys	19	10.73	3.649				

The table 7 shows the 't'-value is found to be 0.829, which is not significant at 0.05 levels. Hence the null hypothesis "there is no significant difference in pre-test spatial reasoning ability scores of boys and girls of experimental group" is accepted at 0.05 levels. So, it can be concluded that both the boys and girls of the experimental group are of equal intelligence.

Table 8

Comparison of Post-test scores of the experimental group with respect to boys and girls

Students' gender of the experimental group (Post-test)	N	Mean	SD	Mean Difference	df	Calculated 't'-value	Sig.
1 for girls	13	17.46	2.757	1.38	30	1.117	0.27
2 for boys	19	18.84	3.819				

The table 8 indicates that the 't'-value is 1.117, which is not significant at 0.05 levels. Hence the null hypothesis "there is no significant difference in spatial reasoning ability of boys and girls of experimental group" is accepted at 0.05 levels. So, it can be concluded that teaching through activity-based learning is equally effective in improving the experimental group's spatial reasoning ability.

Major Findings After analysis of the collected data, the following objective wise findings are drawn from the study.

To study the effectiveness of activity-based learning over traditional methods in enhancing students' spatial reasoning ability in mathematics at the upper primary level.

There is no significant difference between of the control and experimental group pre-test scores but a significant difference between the post-test scores of the control and experimental group. On the other hand, there is a significant difference between the pre-test and post-test scores of the control group and the experimental group.

To compare the effect of activity-based learning on spatial reasoning ability of students in mathematics with relation to different kinds of learners among high and low achievers as well as boys and girls.

There exists a significant difference between the post-test scores of low achievers and high achievers of the experimental group. On the other hand, there is no significant difference in pre-test and post-test scores of the experimental group of boys and girls.

Discussion of the Result

The results of the data analysis about the effect of activity-based learning methods on the spatial reasoning ability of students in mathematics indicate a positive relationship between the two. It reveals that students taught through activity-based learning showed a significant increase in spatial reasoning abilities compared to students taught through the traditional method of teaching. The obtained result may be supported by that of Khan et al. (2012). They concluded that activity-based learning positively impacted the retention of mathematical concepts and students' achievement. It is also found that there is a significant difference between the spatial reasoning ability of students' levels. The high achievers are performing better than the low achievers, which are contrary to the research findings of Buckley et al. (2018), which concludes participants with lower levels of spatial reasoning ability evidenced the utilisation of models of learning to a greater extent. In the present study, gender does not affect the spatial reasoning ability of the upper primary level students. The above finding is contrary to the study conducted by Fabiyi (2017), which states that students' gender dramatically influences the learning of concepts in mathematics, favouring female students. However, it is supported by Yarmohammadian (2014) and Lowrie, Logan and Ramful (2017), who came out with the conclusion with respect to gender that there exists no significant difference in their achievement. This can be attributed to the fact that differences in spatial reasoning ability may be associated with experiences and exposure to spatial constructs rather than gender differences.

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SCHOOL SAFETY CONCERNS AND CONDITIONS: A SURVEY ON LAKHIMPUR DISTRICT OF ASSAM

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ABSTRACT

In the Lakhimpur district of Assam, the investigator did a research survey to assess the schools' development editions with teachers and parent's awareness about school safety. With the help of a self-developed checklist, the researcher collected the data from 100 respondents, including 50 parents and 50 teachers, randomly selected from the Lakhimpur District government and private schools. The findings reveal that there is a significant difference in school safety conditions between government and private schools. The government schools are more aware that school safety must legalise through certification; the private schools are more focused on ensuring the basic facilities that fall under school safety conditions.

Keywords: *School Safety, Teacher and Parent Awareness.*

Introduction

The primary concern of every parent is to ensure his/her child safety which seeks every school to assure school safety. Schools that are the agencies of formal education can change the life of the child and society as the child spends one-third of the whole day in the school in the formative years. School administration is responsible for providing a protected, safe, and secure environment to make a child's learning process more effective and enjoyable. Schools must be safe and secure places for students. All educational community members were involved in ensuring adequate levels of school safety through diverse management and organisational actions and measures to ensure physical, emotional, and social safety (Anna Diaz & Joaquin Gairin Sallan,2017). But the child safety is not only the assurance of the conditions free from fear and exploitation. Still, it includes the school infrastructure, child's health and nutrition, drinking water facilities, sanitation, cybersecurity, and safety from natural hazards and disaster. In the past few years, the number of child physical harm, injuries, abuse and exploitation cases are rising. Lack of disaster management preparation within the school premises (as reported on various news channels and print media)is the cause.

The child's safety becomes the primary concern of the parents, teachers, stakeholders and all local, state and central government.

Conceptualising School Safety

In 2017 National Disaster Management Authority (NDRA) prepared a comprehensive document- "National Disaster Management Guidelines: School Safety Policy" issued to all State secretaries and UT administration by the MHRD Government of India, the Department of School Education and Literacy. According to this document

"School Safety has been defined as creating safe environments for children from their homes to their schools and back. This includes safety from large-scale 'natural' hazards of geological/climatic origin, human-made risks, pandemics, violence as well as more frequent and smaller-scale fires, transportation and other related emergencies, and environmental threats that can adversely affect the lives of children." [1]

The conceptualisation of school safety by the general public is confined to a fearless and comfortable environmentwhich will restrict the focus on behavioural and psycho-social issues only. The National Commission for Protection of Child Rights (NCPCR)developed the "Safety

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and Security of Children in Schools"(2017)manual and checklistassisting various schools and education boards of Indiafor having a common understanding of basic school safety requirements and measures to be ensured for children.The major objective of the manual is to inform, aware, and equip the stakeholders in monitoring school safety and security by highlighting the roles and responsibilities of school teachers and staff. The manual pointed out the different components of school safety ranging from psychosocial elements to school hazard and disaster management elements.

"This includes safety from any kind of abuse, violence, psycho-social issue, disaster: natural and manmade, fire, transportation. Emotional safety is especially important because it is often difficult for teachers and parents to detect emotional problems and difficulties in children. Bullying can cause victimized students to suffer from lower self-esteem and daily stress about their well-being".[1]

Indian Government Acts and Policies on 'School Safety'.

1. Right to Education (RTE) Act 2009 set minimum norms and standards regarding the location and quality of schools. The Act lays down the information of the School Management Committee for the planning of infrastructure and another requirement concerning the operational functioning of the school.
2. The National Disaster Management Act 2005 looks at promoting safety awareness among stakeholders, including teachers and students.
3. National Policy on Disaster Management (2009) highlights the need for structural and non-structural safety in school and educational institutions.
4. National Policy on Children(2013) recognises that survival, health, nutrition, education, development, protection, and participation as the undeniable rights of every child.

On 15th April 2018 supreme court directed the ministry to confirm the guidelines for fixing accountability of school management towards the safety and security of school children. Besides these guidelines, sources reported some shocking child accidents in few years. These shocking incidents raise questions on school accountability, teacher and parents' awareness of school safety. The Government has implemented various steps regarding school building, water safety, health and sanitation, and psycho-social safety in school. Still, these facilities in schools in a remote village and vulnerable areas fall short in adopting adequate measures. Therefore, the paper explores the concerns, the necessary school conditions and parents awareness of school safety in Lakhimpur District of Assam State.

Research Objectives

1. To study the availability of necessary conditions required to ensure school safety.
2. To compare the available school safety conditions among private and government schools.
3. To study the parent's level of awareness about school safety conditions.

Research Hypothesis

1. There is no significant difference in school safety conditions between private and government schools.

Methodology

The descriptive survey method is adopted to assess school safety conditions with the teacher and parent awareness towards school safety in the Lakhimpur district. The sample includes 50 teachers and 50 parents (5 teachers and five parents from each school) selected randomly from a total of 10 schools(7 government and three private schools including Primary, M.E. schools, and High schools)from rural and urban areas of Narayanpur Block in the Lakhimpur district. The study delimits to the Narayanpur block of the Lakhimpur District. The researcher used a self-made checklist for the data collection which consists of three sections. Section1 consists of questions on demographic information and determines the profile of the respondents. Section2 consists of 34 questions on the physical safety of the child at schools. Section 3 consists of 26 questions on emotional and personal safety-related statements related to the child's safety at schools.

Descriptive statistics like percentage analysis is used to analyse the data of the survey. The 't'-test was used to test the null hypothesis. The result and discussion were based on the participant information and researcher observation only.

Major findings

Objective 1: To study the availability of necessary conditions required that ensure school safety.

1. In the Narayanpur Block of Lakhimpur district, government school building facilities are better than private schools. Most government school buildings are certified as per the norms of housing by the local authority with proper electrical fittings. Both types of schools have separate toilets for girls and boys with adequate maintenance and cleanliness. The government schools lack protective boundary walls, and private schools lack proper lighting, electrical fittings, and running water facilities.
2. Both government and private schools are aware of the fire safety requirements and do not have a fire safety certificate.
3. The government and private schools are not situated in the earthquake zone. Some government school teachers don't have any emergency plans in place for disaster preparedness at schools. Compared to government school, private school teachers are much more aware of earthquake safety in schools.
4. The government and private schools are situated near the seashore or a river. Both the government and private school teachers don't prepare any plan during the natural disaster. Only a few schools have transported mechanisms in place for an emergency transport system for students.
5. Government schools regularly check the electrical system in schools—the minor importance given to the display of warning signals on electrical fittings areas.
6. Both government and private schools don't have safety certificates for drinking water in schools. Government and private schools are well protected by the water source and always provide safe potable water.
7. Few government schools are providing the facilities of laboratory safety, and none of the government and private school teachers is trained to meet any emergency in the laboratory.
8. Both government and private schools don't meet safety conditions for disabled children. In government schools, differently-abled are less accompanied by a teacher or attendant when using toilets.
9. The government schools regularly maintain records of the health-related issues in schools with the proper implementation of the mid-day meal scheme. In private schools' parents and teachers are also concerned about the health, but they don't provide mid-day meal to the students.
10. Both government and private school teachers are much aware of the regular orientation towards sexual abuse safety. Whereas the government school has a committee on child Sexual abuse, the private schools display child safety posters in prominent locations of the school.
11. Both governments and private schools don't have cyber safety facilities in schools as the schools lack basic computer and internet facilities.

Objective 2 : To compare the available school safety conditions among private and government schools.

Hypothesis 1 : There is no significant difference in school safety conditions between private and government schools.

Table 1

t-test comparison for Government and Private school Safety Conditions

Variable	Test Value = 0					
	Calculated 't' value	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Lower	95% Confidence Interval of the Upper
Government School Teacher	15.193	59	0.000	55.717	48.38	63.05
Private school Teacher	12.094	59	0.000	55.033	45.93	64.14

From table 1, it is evident that for the degree of freedom (df) = 59, the t value is significant at $p=0.000<0.05$ level. Therefore, the null hypothesis is rejected at 0.05 level. Hence there is a significant difference in school safety conditions in government and private schools.

Objective 3 : To study the parent's awareness level on school safety conditions.

Both the government and private school children's parents are unaware of the primary school safety

requirements like school building, fire safety, drinking water certification. Besides that, parents are least informed of the essential requirements to ensure electrical safety, cyber safety, natural disaster management, necessary components of school safety. Whereas the government school children's parents are aware of the health, nutrition requirements, the private school children's parents are aware of prevention of child abuse, sanitation, and hygiene requirements in the schools. It is observed that private school children's parents are more aware of school safety requirements than government school parents.

Discussion and conclusion

Safety is an implicit determinant of the quality of the school environment which is explicitly realised through meeting the norms and standards of national policies and guidelines. If not fulfilling these core principles of school safety policies arise risks and threats to child safety putting the child's wellbeing at stake. So, the teachers, parents, and stakeholders need to be aware of school safety policies and guidelines. Every parent has a mutual trust in school for providing a positive and comfortable environment for child learning and overall development next to family. Though the researcher revealed that where the government schools are more aware of school safety should be legalized through certification the parent's schools are focused on ensuring the basic facilities that fall under school safety conditions. Being aware of school safety policy and guidelines can't assure school safety rather teachers have to be responsible for their roles and responsibilities for ensuring school safety. The parents and the other stakeholders have to be informed and provided with school safety guidelines. Government should train teachers through capacity-building programs. Regular monitoring and supervision of school safety conditions should ensure a well-protected, safe and secure environment for children who are the future citizens of our nation.

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NURTURANCE OF HIGHER ORDER THINKING SKILLS AMONG GIFTED ADOLESCENT CHILDREN

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ABSTRACT

The main objectives of this research study are to develop and evaluate the effectiveness of a training programme on higher-order thinking skills for gifted adolescent children, which is independent of a specific academic subject, which can encompass the various aspects of students' day to day life. Total 27 intellectual abilities were selected from the SOI model of Guilford (1988) for the intervention programme as the theoretical basis. Multi-method research was done with a true experimental design on the purposive sample of 75 intellectually gifted adolescents. 27 pre and post standardized tests were given to both the control and the experimental groups. The statistical analysis supported the hypothesis that the given training programme of higher-order thinking skills could be practical and nurture 15 higher-order thinking abilities. In the academic examination, the programme is effective for intellectually gifted low achievers of the experimental group.

Keywords- *Higher Order Thinking Skills, Gifted education, Gifted adolescents*

Introduction

The research on giftedness and the nurturance of gifted children in the last few decades have revealed that gifted children have different educational needs (Silverman L.K., 2002; Reis, 2008). Many trials of gifted education programmes have been carried out worldwide for their nurturance and skill development. We identify gifted children by applying psychological tests or by observations of their extraordinary capacities. But the identified talented children tend to be expected, and often they show poor performance if their gifts are not nurtured at proper developmental age (Silverman L.K., 2002). It is also observed that only a few of them can achieve excellence during school activities despite rigorous efforts. After investigating its causes, the researcher concluded that only cognitive challenges could not motivate all intellectually gifted students. Teaching metacognitive thinking processes, training content on developmental age-specific needs, the association of intellectual abilities required for higher-order thinking, real-life situations, big complex themes and a concentric development of the concept-connectivity play a vital role in effective learning. The researcher is a teacher in a specified category secondary school of intellectually gifted children. Last 23 years, she has been teaching intellectually gifted children. With her long experience, she hypothesized the enhancement of higher-order thinking skills for gifted adolescent age children and proved its effectiveness.

Gifted individuals are national assets. To overcome the challenges of 21st century critical thinking, insight and analysis along with an interdisciplinary, holistic approach in knowledge can be achieved by learning higher-order thinking skills. In India, the Government supported 598 Jawahar Navoday Vidyalay (MHRD, 8 May 2018) for talented students from the rural area where academic rigour is maintained. Still, there is no special need-based education for the talented. The Gifted students need special attention and special training to explore their abilities towards excellence. Anitha Khurup (2014), while addressing the position of gifted education in India, articulated, "In the

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absence of a national programme of gifted education, India loses an opportunity to tap the talent of these young minds that can contribute to the growth and development of the nation."(Khurup. A, 2014). But the researcher feels the skills only restricted to specific subjects are insufficient to develop students' intellect to face accelerating changes and challenges around them. For gifted students, even all students must acquire higher-order thinking skills to fill the gap between the demand of skilled persons at the local, global level and their education. So the researcher felt strongly a need to develop a training programme independent of a specific academic content, which encompasses the various aspects of students' day-to-day life and can nurture their higher thinking skills.

Significance of the study

The transformation happens when children connect facts and ideas to create, elaborate, hypothesise, generalise or make some interpretations by processing information and previous experiences. These thinking processes induce children to solve problems, discover meanings and applications. H-THOTS programme is mainly designed to teach thinking skills through real-world context concerning specific intellectual abilities. Low achievers who fear academic competition, academic dislikes, or failure can learn higher-order thinking skills. Gifted students do not develop into successful if their thinking skills are not developed. This programme may be helpful for special schools like Jawahar Navoday Vidyalay, the schools for identified talented children. The H-THOTS programme is not subject-specific or single ability specific; it is a product of an integrated, holistic approach of 27 abilities of intelligence required for higher-order thinking. So this programme may also be useful for normal students if the content is selected as per the potential abilities of the group. So the content of this programme structure has been chosen considering adolescents' interest and related to their day to day life.

Objectives

I. To develop an enhancement programme of higher-order thinking skills based on futurological techniques.

i) To analyse the learning process of higher-order thinking in secondary school adolescents.

ii) To develop a theoretical model to design a training programme.

iii) To develop a training programme on Higher Order Thinking Skills

II. To determine the effectiveness of the H-THOTS (Holistic Training of Higher Order Thinking Skills) programme for secondary school adolescents' higher-order thinking and academic enhancement.

Hypotheses

1. The programme based on futurological techniques enhances higher-order thinking skills.

2. The performance in academics enhances in the experimental group after the implementation of the H-THOTS programme based on futurological techniques.

Method

The training program developed was evaluated by the control variable, the experimental method, and the researcher's observations during the execution of the training programme. Total 27 abilities were selected from the SOI model of Guilford for the intervention programme as the theoretical basis. Multi-method research was done with a true experimental design on the purposive sample of 75 intellectually gifted adolescents. 27 pre and post standardized tests were given to both the control and the experimental groups.

Parameters selected for the intervention of the programme:

The researcher had considered the SOI model of Guilford to work on 27 cognitive abilities required for higher-order thinking to determine objectives and procedures. Each ability is a combination of thinking x content of thinking x product of thinking stated in the SOI model of Guilford. Divergent thinking, convergent thinking and evaluation are the most required process for higher-order thinking, so these three were taken. Out of five, three contents of thinking were selected.

Table 1

The structure of intellect (SOI) model of J.P.Guilford

Content	Process	Product
1. Visual	1. Cognition	1. Units
2. Auditory	2. Memory retention	2. Classes
3. symbolic	3. Memory recall	3. Relations
4. Semantic	4. Divergent production	4. Systems
5. Behavioural	5. Convergent Production	5. Transformation
	6. Evaluation	6. Implications

[27 abilities: 1. Divergent Visual System 2. Divergent Visual Transformation 3. Divergent Visual Implication 4. Divergent Symbolic System 5. Divergent Symbolic Transformation 6. Divergent Symbolic Implications 7. Divergent Semantic System 8. Divergent Semantic Transformation 9. Divergent Semantic Implications 10. Convergent Visual System 11. Convergent Visual Transformation 12. Convergent Visual implication 13. Convergent Symbolic system 14. Convergent symbolic transformation 15. Convergent symbolic Implication 16. Convergent Semantic System 17. Convergent Semantic Transformation 18. Convergent Semantic Implication 19. Evaluation Visual System 20. Evaluation Visual Transformation 21. Evaluation Visual Implication 22. Evaluation Symbolic system 23. Evaluation Symbolic Transformation 24. Evaluation Symbolic Implication 25. Evaluation Semantic System 26. Evaluation Semantic Transformation 27. Evaluation Semantic Implication]

IX grade identified gifted students were selected as sample. About the period of secondary school, NCF stated, "the ability for abstract reasoning and logical thinking emerges, allowing children the possibility of deep engagement with both understanding and generating knowledge beyond the here and now. A critical understanding of the self in relation to society also emerges during this period of secondary school"(NCF, 2005). The researcher did a comparative study of various learning theories and theories on intelligence and has designed a theoretical synthetic model of the process of higher-order thinking. The concept paper is based on the taxonomy of learning objectives developed by Bloom, et al. (1956) and Guilford's SOI (1959) model of multiple intelligence. The researcher's concept paper helped her design a training programme on thinking in various ways mentioned in knowledge contribution.

H-THOTS programme

Nature of the programme

All activities are based on non-academic content. The developmental adolescent age phase of the sample group was considered for the selection of the content of the programme. The researcher selected thinking exciting topics that contain current complex issues of day-to-day life, futuristic creations and systemic thinking. This programme covers only three content (medium of thought) commonly used in school practices: Visual, Symbolic and semantic. It is observed that gifted students tend to learn and think more about complex themes than they do in academic subjects. This study addresses how the 'Holistic thinking' programme for gifted children with some futurological techniques nurtures a wide variety of thinking goals and fulfils the learning needs of intellectually gifted children. An 8-month training programme named Holistic Training programme of Higher Order Thinking Skills H-THOTS conducted on the experimental group.

Procedure

The sample selected for the research was IX grade students of Jnana Prabodhini Prashala, a specified category school of Maharashtra State for intellectually gifted children. This was a deliberate or purposive sample. This sample represents the gifted children when selected using standardised psychological tests from a large population seeking admission in 5th standard [More than 99+ percentile rank on intelligence tests developed by Jnanaprabodhi's Institute of Psychology Pune, based on Guilford's model of intelligence]. To make two equal groups, the students of IX grade were given a screening test of CFIT scale 2(Culture Fair Intelligence Test) which is a general IQ test then according to the scores obtained on the test; students were divided into two equal groups in such a way that both should have the approx. Same number, same mean and same standard deviation. The pre-tests of 27 abilities of thinking were given to both groups. One group underwent an intervention programme of 8 months (experimental group) while the other group was kept as a control group for the

experiments allowed for the school's routine programme. After completing the training, the post-tests of 27 facets of thinking were given, and the difference in the scores is used to evaluate the programme's effectiveness.

Tools

For the data collection 'Jnanaprabodhini's Prajnaman Kasotimala' IQ tests (Test batteries) of Jnana Prabodhini's Institute of Psychology, Pune (27 Standardised tests based on Guilford model of intelligence) were used as tools for data collection.

Statistical observations

The sample size of each group was more than 30 so that the parametric test was applied to those normally distributed abilities. Also, it was purposive, and cream strata of the population; the "Shapiro-Wilk Normality Test" was applied to test normality before the hypothesis testing for each of the ability. The non-parametric test (Wilcoxon Signed-Rank Test) was used only when the data was not standard. Observations were noted during the conduction of the training programme.

Data collection

The data collection was done quantitatively and qualitatively to measure changes in the scores of the higher-order thinking skills by standardized tests and observations noted by the researcher during the process of programme execution. Hypothesis testing was done with both parametric and non-parametric tests. For hypothesis testing, the experimental and control groups' pre and post means were treated with paired two-tailed and one-tailed t-test at alpha level 0.05. The students who scored less than 70%marks (D grade) in the 8th-grade annual examination were selected for comparison to prove the second hypothesis. 19 students from the experimental group and 21 Students from the control group were considered to compare their 8th grade and 9th-grade percentage of marks. Hypothesis testing was done based on paired t-test at alpha level 0.01.

Limitations

Though there is controversy about whether higher-order thinking skills start with elementary schools or secondary schools, the H-THOTS programme is only applicable for 8th grade onwards (children of age between 13 to 19 yrs) and hence restricted to only secondary and higher secondary gifted adolescent school children. So the conclusions drawn may not be applied to normal children without modifications. Many practical elements such as attitudes, values, previous experiences, inclinations are intangible to assess but strongly involved in the higher-order thinking process are uncontrollable and highly subjective. As the assessment is of psychological variables, the study's findings are based on the responses given by subjects invariable in the survey.

Conclusion

The researcher selected about 27 abilities for this research study on higher-order thinking skills. 'H-THOTS' programme on higher-order thinking skills based on futurological techniques for intellectually gifted, School going adolescents is successful in enhancing 15 abilities of higher-order thinking skills. These are- Divergent semantic system, Divergent Semantic Transformation, Divergent Semantic Implications, Convergent visual transformation Convergent visual implications, Convergent Symbolic system, Convergent symbolic Implication, Convergent Semantic Transformation, convergent Semantic Implication, Evaluation Visual Transformation, Evaluation Visual Implication, Evaluation symbolic System, Evaluation Symbolic Implication, Evaluation Semantic System, and Evaluation Semantic Transformation. In academics, both the groups showed a significant increase in previous marks, so this programme could not prove its effectiveness. However, this programme is established to be effective for intellectually gifted low achievers.

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PARENTAL INVOLVEMENT IN THE STUDY OF HIGHER SECONDARY SCHOOL STUDENTS

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ABSTRACT

The present study aims to find out the extent of parent involvement in the study of higher secondary school students. Parental involvement is the key to education and the solution to the problems of higher secondary school students. The main objective of the present study is to find out the level of Parental involvement in the study of higher secondary school students and the difference in Parental involvement with respect to their gender and locale. The study was conducted on a sample of 300 higher secondary school students, and the tool used to collect data was the Parental Involvement Inventory. The study revealed that the Parental involvement in the study of higher secondary school students is at a moderate level, and there is a significant difference in the Parental involvement with respect to their Gender and Locale. The study pointed out that parental involvement embraces a person's mood, attitude, opinion, motivation and style of thinking, perceiving, speaking and acting. Parent's training help in polishing or moulding the students' innate abilities and making them more professional.

Key Words: *Parental involvement, Higher secondary school students*

Introduction

Indian society has a dynamic and complex nature. The right type of education helps to prepare people to live successfully in the changing and challenging environment. Education aims to promote the individual's overall development, physical that includes mental, cultural, emotional, and social. Thus education helps to shape the personality of the individuals. Parental involvement is one of the essential requirements for the holistic growth and development of children. The most influential of all educational factors is the conversation in a child's home. Parents use four academic styles namely active and steady limited excessive authoritative and reduced or parental rejection.

In a primary group like family, parents and other family members involve themselves in the adolescents' academic activities, which need to be systematic, strategies and tactics through which the involved ones solve the problems and shape the learned phenomenon.

Parental involvement includes a wide range of behaviours. According to Vandergrift and Green, two key elements work together to make up the concept of parental involvement. One of these is a level of commitment to parental support. This includes things such as encouraging the student, being sympathetic, reassuring and understanding. The other element needed is parental activity and participation, such as doing something observable. This combination of the level of commitment and active participation of the parent motivate and encourages the children to learn better.

Need and significance

The Higher Secondary stage is a turning point in the life of an individual. Students in higher secondary schools are in the adolescent stage which is filled with stress and

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strain. They are confronted with several problems-physical, mental, emotional and social; due to the sudden psychological and physiological changes occurring in that period. Without proper guidance and motivation, the students cannot achieve their educational goals. Parental involvement is the key to education and the solution to the problems. Parental involvement is considered an essential factor in the academic achievement of the students. Parental involvement is a combination of psychological forces that initiate, direct and sustain behaviour towards attaining some goals, which provides a sense of significance.

Parental Involvement has been defined across studies as representing many different behaviours and practices at home or at school including parental aspirations, expectations, attitudes and beliefs regarding child's education. It can refer even to parental expectations or to the ways parents help their children develop positive attitudes (Agarwal J.C. 1986). The parent need to understand the different areas child development such as physical, social, emotional and cognitive development. This helps to provide a bond between home experiences and the educational program. When the parents understand how a child develops, they can provide a more positive home environment. A parent may even need to learn more and possibly attend the parent classes offered by schools. This type of involvement can produce a positive spiral of success for the parent, school and student. Because of this backdrop issue, the investigator decided to study parental involvement in the study of higher secondary school students.

Objectives

1. To find out the level of Parental involvement in the study of higher secondary school students.
2. To find out the significant difference, if any, in the Parental involvement in the study of higher secondary school students with respect to their Gender and Locale.

Hypotheses

1. There is no significant difference in the Parental involvement in the study of higher secondary school students with respect to gender.
2. There is no significant difference in the Parental involvement in the study of higher secondary school students in their study with respect to locale.

Methodology

The method adopted in the present study is the Normative survey. All the higher secondary school students of the Kanyakumari district. The sample selected for this study is 300 higher secondary school students of the Kanyakumari district. Personal data sheet and Parental Involvement Inventory (PII) prepared and validated by Basil Gagarin and Selvakumar (2018) were used to collect data from the prescribed sample.

In order to collect relevant data for the present study, the investigator administered the tools to the selected sample under standardised condition and only after getting permission from the heads of the schools the tools were administrated. The collected data were subjected to further statistical analysis in order to verify hypotheses. The main statistical techniques used are Mean, Standard deviation and t-test

Analysis and Interpretation

Table 1

Level of Parental involvement in the study of higher secondary school students

Category	Low		Moderate		High	
	N	%	N	%	N	%
Parental involvement	37	12.33	149	49.67	114	38

Table 1 shows that 12.33 % of higher secondary students have low level parental involvement, 49.67% have moderate level parental involvement and 38% have high level parental involvement in their study.

Hypothesis1: There is no significant difference in the parental involvement in the study of higher secondary school students with respect to gender.

Table 2

Difference in the parental involvement in the study of higher secondary school students with respect to gender

Gender	N	Mean	S.D	Calculated 't' value	Remark
Female	165	255.14	18.12	4.07	S
Male	135	242.69	12.01		

It is inferred from table 2 that the calculated value of 't' 4.07 is greater than the table value(1.96) at 0.05 level of significance for 298df. Hence the null hypothesis is rejected. This shows a significant difference in the parental involvement in the study of higher secondary school students and the difference is being more in favour of female students.

Hypothesis 2: There is no significant difference in the parental involvement in the study of higher secondary school students in their study with respect to locale.

Table 3

Difference in the parental involvement in the study of higher secondary school students with respect to locale

Location of School	Number	Mean	S.D	Calculated 't' value	Remark
Urban	144	240.14	13.55	3.08	S
Rural	156	249.63	16.78		

It is inferred from table 3 that the calculated value of 't' 3.08 is greater than the table value(1.96) at 0.05 level of significance for 298 df. Hence the null hypothesis is rejected. This shows a significant difference in the parental involvement in the study of higher secondary school students and the difference is in favour of urban school students.

Major Findings

The following are the major findings of the study:

1. 12.33 % of higher secondary students have low level of parental involvement in their study, 49.67% have moderate level of parental involvement, and 38% have high level of parental involvement.
2. The comparison of the parental involvement of male and female students revealed that the parental involvement in the study of female students is better than that of male students.
3. The comparison of the parental involvement of urban and rural students showed that the parental involvement of in the study of rural students is better than urban school students.

Conclusion

Parents should look at everything through the eyes of their children. They have to provide nutricions food, shelter, love, care, real affection and enough freedom to their children. They should allow the children to live their life but with proper guidance and care. The only thing the parents have to do is providing opportunities. The parents should consult children about the things that affect their lives. Parents never push their wards to achieve a good mark. They have to find out their children's hidden talents and do the necessary to enrich them. The more we understand our children the more we can help and support them.

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GENDER DIFFERENCES IN THE LEVEL OF SATISFACTION OF INFORMATION RESOURCES AND SERVICES– A STUDY OF FACULTY WORKING IN THE COLLEGES OF EDUCATION, CHENNAI

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ABSTRACT

Gender differences have been recorded in terms of skill association. A significant change in terms of gender equality and access to resources is limited. Increased access to information by women will contribute to their empowerment. It has a beneficial impact on society. The main objective of this study is to analyze the gender-wise variation in the use and satisfaction of library resources and services. The study is confined to four aided colleges of education and two government institutes of advanced education in Chennai. All the faculty members in these colleges and institutes were taken as sample. Out of 109 members, 107 responded. Female members are more satisfied with the resources and services.

Keywords: *Colleges of education, gender, library resources and services.*

Introduction

Gender difference has been an issue at the forefront of dynamic public discussion in all spheres of life; In educational parlance, gender difference has been recorded in skills acquisition, information literacy behaviour, classroom interaction, teaching practice, reading habits, professional development, etc. The scope of research on gender issues shows a significant difference between the faculty of both genders with reference to access to Library Resources and Services.

Review of Related Literature

Orgeron (2005), while stressing the usefulness of the academic library, states that "the library is a very natural component to academic support services now complementing tutoring, career decision making and writings across the curriculum".

Pauline Adeniran (2011)2 examined the relationship between service quality and users' satisfaction at Redeemer's University. The study revealed that students had used the library more than the academic faculty.

Simmonds (2001)3 found that the factors that can influence user's satisfaction are responsiveness, competence and assurances, tangibles, and resources.

Kiran Kaur (2010)4examined the views of academic staff on the quality of educational library services in Malaysia. The results revealed that academic staff viewed the quality of library services to be just above average.

Significance of the study

The teacher is the only person who has constant contact with both the knowledge and the student in moulding their growth. Focusing the study on the faculty of teacher education colleges is because of their central role in the educational system to develop the entire society towards excellence. Hence the present study has been taken to identify the variation in the level of satisfaction of library resources and services of both genders.

Objectives of the Study

To assess the level of satisfaction of library resources and the services by the faculty members of colleges of teacher education, the researcher has analyzed the gender

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wise variation in the satisfaction on the library resources and services by the faculty of Colleges of Education in Chennai.

Methodology

A structured questionnaire was designed for data collection based on the objectives of the study. The entire population, i.e., all the faculty members of two Institute of Advanced Studies in Education four government-aided Colleges of Education in Chennai, were taken as a sample. Among the total faculty members (109), 97.24% (107) responded. Statistical Packages for Social Sciences (SPSS) is used to analyze the data.

Table 1

Distribution of respondents by sex

Sex	Frequency	Percent
Male	49	45.79
Female	58	54.21
Total	**107**	**100**

Table 1 shows the distribution of respondents by sex. Among the total respondents, 45.79% are male, and 54.21% female. From this table, it can be found that more female faculty are working in teacher education colleges.

Table 2

Preferred sources of information required – Gender wise difference

Nature and Type of Information	Male	Female	Average Score
Year Books, Dictionaries & Encyclopaedias	33.64	40.19	36.92
Subject related textbooks	38.01	47.98	43
Subject related reference books	37.07	46.42	41.75
Other general books	30.53	37.07	33.8
Subject related journals	35.2	43.93	39.57
General journals	31.15	39.25	35.2
Theses	34.89	44.86	39.88

Likert's scale is used to assess the level of preference of information sources required related to the subject. From table 2 it can be found that highly sought information source is subject related textbooks (score 43) and subject related reference books (score 41.75). Regarding the level of preference by faculty of both gender, it can be observed that it is higher in the case of female faculty (score 47.98 and 46.42 respectively) than the male faculty (score 38.01 and 37.07 respectively). Similarly, the level of preference of theses, yearbooks, Dictionaries and encyclopedias, subject related journals, general journals, and other general books is more significant in female faculty than male faculty.

Table 3

Motivating factors to seek and collect information – Gender wise difference

Motivating factor	Male	Female	Total
To prepare the students for University Examination	15.26	18.07	16.67
To qualify for student project work	15.26	18.07	16.67
General awareness for new knowledge	15.26	18.07	16.67
To prepare for examinations	15.26	18.07	16.67
For the pleasure of doing good work, self-fulfillment and self-satisfaction	15.26	18.07	16.67

Table 3 shows no gender wise variation in the motivating factors to seek and collect information by the faculty.

Table 4

Extent of dependency on sources for getting relevant references – Gender wise variation

Sources	Male	Female	Total
Textbooks	28.04	35.83	31.94
Handbooks/Reference books	30.22	34.89	32.56
Journals/periodicals	30.84	35.2	33.02
Project reports/Theses	30.84	36.14	33.49
Online resources	31.46	40.81	36.14

The teachers of teacher education have varied levels of dependency on various types of information resources. The highest reliance is on online resources (mean score=36.14), followed by project reports/theses (mean score =33.49). The minor dependency is on textbooks (mean score=31.94), followed by handbooks/reference books (mean score=32.56). Table 4 shows the levels of dependence on various information resources by male and female teachers. The reliability of these sources is more in the case of female teachers than male teachers. For example, female teachers rely on online resources with a score of =40.81, while the score for male teachers is 31.46. Similarly, the score of female teachers for projects and theses is 36.14 (male = 30.84), and textbooks are 35.83 (male = 28.84).

Table 5

Preferred services used – Gender wise difference

Services	Male	Female	Total
Loan of books	30.53	31.15	30.84
Reference service	32.09	37.07	34.58
Interlibrary loan	21.5	23.68	22.59
Journals/periodicals circulation	30.84	33.33	32.09
Newspaper clippings	28.04	32.4	30.22

Table 5 shows the extent of use of library services by teachers of different genders. Reference service ranks first (mean score=34.58) followed by journals/periodicals circulation (mean score=32.09) and loan of books (mean score=30.84), and Newspaper clippings (mean score 30.09). Loan of books takes third place (mean score=1.83). The least score is for interlibrary loan (mean score=22.59). The scores for all the services for female faculty is higher than the male faculty.

Table 6

Level of satisfaction with library resources

Sources available	Male	Female	Total
Books	40.19	49.22	44.71
Journals/periodicals	37.38	47.04	42.21
Newspapers	38.94	46.73	42.84

Table 6 shows the level of satisfaction with the sources available in the library by teachers of both sexes. The level of satisfaction is maximum with books (mean score=44.71) followed by newspapers (mean score=42.84) and Journals/periodicals (mean score=42.21). Books have a higher level of satisfaction with female teachers (mean score=49.22) than male teachers (mean score = 40.19). This pattern holds good for the level of satisfaction on other sources like journals/ periodicals and newspapers. This shows that female teachers are more satisfied with the library resources than male faculty members.

Table 7

Level of satisfaction of library services

Services	Male	Female	Total
Loan of books	35.2	39.88	37.54
Journals/periodicals circulation	36.76	39.56	38.16
Newspaper clippings	33.64	40.81	37.23
Interlibrary loan	28.03	35.2	31.62
Reference service	39.25	45.17	42.21

Table 7 depicts the level of satisfaction of the services of library faculty members of both genders. The level of satisfaction is maximum with reference service (mean score=42.21) followed by journals/periodicals circulation (mean score=38.16) and loan of books (mean score=37.54). The least ranked service is an inter-library loan (mean score=31.62). The level of satisfaction of all the services is more in female faculty members than male faculty.

Conclusion

This paper reveals that there is a significant difference between male and female faculties in their preferences of sources of information. Male prefer general books but female prefer subject related books. Regarding the extent of dependency on sources for getting relevant references female are more dependent upon the various types of information sources. In terms of the use of library services female significantly differ from male and further the results reveal that the female show a high level of satisfaction with the library resources. The overall analysis reveals that there is no such significant difference between male and female faculties in their access and use of information resources.

Continued on Page 25

INTERACTION ANALYSIS AS A TOOL FOR MEASURING THE EFFICACY OF TEACHER EDUCATION PROGRAMME

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ABSTRACT

Interaction analysis is an observational tool used to understand the verbal communication and socio-emotional climate prevailing in the classroom. In a teacher education programme, the prospective teachers are well acquainted with this technique to develop their teaching skills at an optimum level. But, studies regarding the probable difference between the impact of training on experienced and novice teachers have been scarcely reported in the literature. We have dealt with this issue in the present study. The results revealed that training undeniably enhanced the teaching ability of the novice candidates, whereas experience influenced the in-service teachers more in some cases rather than training. It is to mention here that such studies should be conducted with a larger sample size for statistical validation.

Keywords: *Interaction Analysis, Verbal Interaction, Effectiveness, Quality Teaching.*

Introduction

In the ancient era, teaching was a one-way process where teachers were the cardinal factor of a class [1]. They posed directions, criticised students' views, and passive recipients of the information; they had no freedom of comments [2]. Today the concept of instruction has drastically been shifted from "sage on the stage" to "guide from the side" [3-4], where teachers play the role of a pedagogical facilitator. They offer just instructions, not directions; accept students views, and encourage collaborative interactions [5-6]. Since teaching is an ever-changing process, it is noticeable there has been a massive paradigm shift of the vision of classroom interaction from an ancient aspect [7-8]. Therefore, there is always an opportunity to explore the effectiveness of modern-day teacher training strategies. In this context, enormous attempts have been addressed by educational policymakers worldwide [9]. Consequently, the regulations and curricula of "teacher education" in India have undergone a steady paradigm shift over the years [9]. Extensive research on the teaching strategies of educators and their interaction with students suggests that innovative pedagogies have been developed continuously to tackle the challenges of diverse students [10]. But professional accountability and integrity demand that a teacher be always effective for his/her students while teaching in class.

At present, two types of entrants enrol themselves in teacher training institutes: one, having a few years of experience pursues training enjoying promotional benefits; and the other, the entire novice prospective teachers without experience who are the aspirants of a teaching job. Here lies the focus of this paper, i.e. whether the training has a similar impact on both the groups o any difference in reception and execution of the training between these two groups. In other words, is experiencing a factor in how a trainee accepts and practically executes training?

To address this issue, among the plethora of various styles of analysing classroom observation tool, we have selected the four main parameters of "Flanders Interaction analysis Category System (FIACS)" [11]. These are

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Indirect Teacher Talk (ITT), Direct Teacher Talk (DTT), Pupil Talk (PT) and Silence or Confusion (SC). FACS explains the categorisation of all possibles verbal behaviour of classroom interaction with the pupils. In the present investigation, the impact of training on the teaching ability of experienced (i.e. in-service teachers) and novice (i.e. Pre-service prospective teachers) candidates have been compared.

Objectives of the Study

The objectives of the present study were as follows: (a) The teacher training system did not have equal impact on experienced and novice candidates, (b) To find out the effectiveness of training for enhancing teaching effectiveness, (c) To find out the impact of experience on the in-service candidates than their training for effective teaching and (d) To understand the perception of prospective pre-service teachers towards training that enhanced their teaching quality.

Methods

While undertaking the present study, ten B. Ed trainees from Gangadharpur Shikshan Mandir Howrah, West Bengal, India, were divided into two groups - five were in-service teachers with some prior experience of teaching and five completely novice. The study focused on classroom interaction patterns between experienced and novice teachers and between the trainees' initial and terminal teaching styles. Thus, 20 classes (i.e., 5 classes each for the initial and terminal teaching of both the experienced and novice teachers) were observed for recording data. There are a plethora of tools available to measure classroom interaction patterns. Flander Interaction Analysis Category System (FIACS) was found to be the most popular one. Data were collected while sitting in the best position of a classroom where participants were observed. At the end of every three-second interval, it was decided which category best represented the communication events just completed [11]. In each class, data were collected for 20 to 25 minutes, and the numbers written down were paired. The first number of Dataed by "row", and the second one in each class was represented by, "column". The range of the total number of tallies was fixed between 380 and 420. The observations were tabulated n a 10×10 matrix. Based on this matrix, four parameters were selected from FIACS for computing classroom communication.

The considered parameters were: Direct Teacher Talk Ratio (DTT), Indirect Teacher Talk Ratio (ITT), Pupil Talk Ratio (PT), and Silence or Confusion (SC). The numbers of tallies were then converted to percentages for making the verbal classroom interaction analysis instrument more intelligible. The analysis was based on "between experienced and novice teachers within initial teaching and final teaching" and "between the initial and final teaching of experienced and novice teachers '. Paired and unpaired t-tests were used here for validating the variations of the observed parameters statistically.

Limitation

A large sample size would have required for results to be generalisable. The research design was a descriptive survey, and the data were collected in a cross-sectional manner. The main focus of the present investigation was on verbal interaction and socio-emotional climate in the classroom. Unfortunately, the statistical analyses were also not up to the mark.

Results

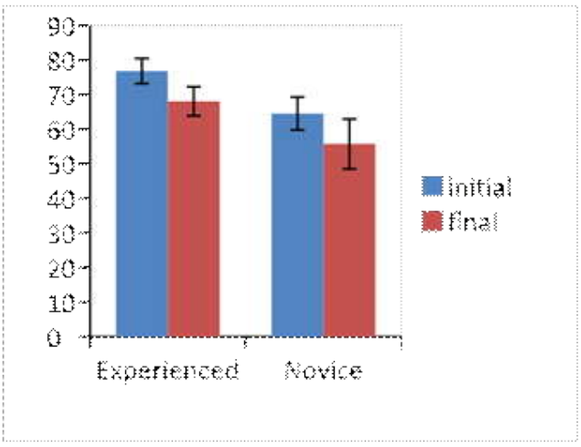
In direct teacher talk (DTT), there was no significant difference between experienced and novice candidates within initial and terminal teachings (Figure 1). In addition, no variation was observed between the initial and final teachings of both the experienced and novice teachers.

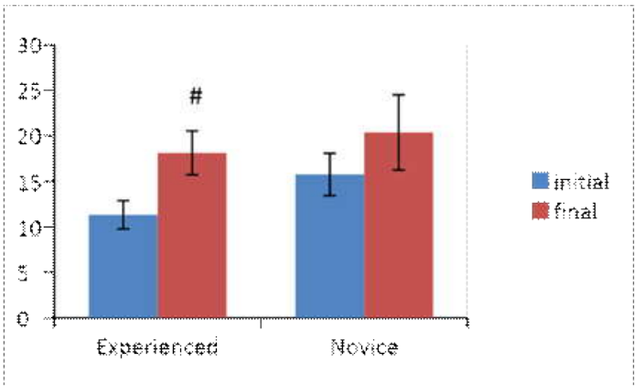
The results of ITT are depicted in Figure 2. The results of initial and final teachings did not vary significantly when compared between experienced and novice teachers. There was also no significant difference between the results of initial and final teachings within novice teachers. However, at the final phase of practise teaching, the ITT of experienced candidates were higher ($P < 0.05$, paired t-test) when compared to the initial phase of practice teaching. From the above, it can be stated that the rate of improvement in the interaction of teachers with the students from the initial to the final phase of practice teaching was higher in the case of experienced candidates.

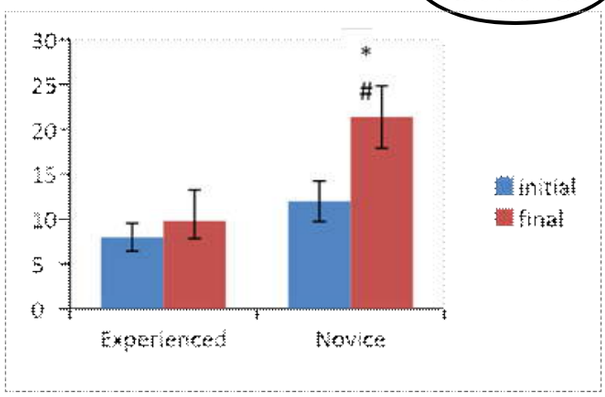
In the Pupil talk (PT) case, no significant difference was observed between the initial and the final teaching within novice and experienced teachers (Figure 3). Additionally, the result was not significant between experienced and novice

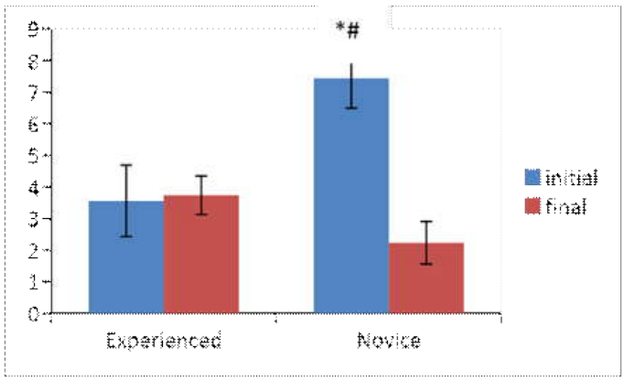
entrants within the initial teaching. Nonetheless, the t-test value of the Pupil Talk (PT) ratio was found to be significant in the final phase of the practice teaching session for novice candidates compared to experienced ones ($P<0.05$, unpaired t-test).

The results of students' silence or confusion (SC) in the classes of experienced candidates were found to a better compared to novice encounters in the initial phase of practice teaching ($P<0.05$, unpaired t-test) (Fig. 4). However, they could not maintain this trend during the final phase of practice teaching. In addition, the result was not significant between the initial and final phase of the practice teaching within experienced candidates. On the other hand, novice candidates significantly improved in the final teaching phase than the initial teaching ($P < 0.05$, paired t-test). Therefore, it can be stated that the lack of experience of the novice aspirants affected the classroom interaction process initially, but the situation gets improved later.









Discussion

For effective teaching in schools, lecturing should not be the only focus of the teachers; rather, they should incorporate different teaching styles and strategies [12]. However, in the present study, DTT did not show any significant difference between the groups. This may be because before practice teaching, the candidates have already been trained to avoid the "DTT only" method in their classes. It is mainly composed of lecturing, giving directions and criticising. Nevertheless, all the candidates applied various strategies successfully.

For conducting a classroom interaction effectively, an efficient teacher has to learn various critical techniques of classes very delicately, and one of those important components is "pupil psycho-analysis" (PPA) [13]. Nevertheless, mastering the art of PPA is a lifelong process that could only be achieved after combining experience with intellect and training [14]. ITT, which combines four components (i.e. accept the feeling, praise or

encouragement, acceptance or usage of ideas of students, and asking questions), demands successful PPA by the teachers. In the present work, experienced candidates significantly improved their final teaching, whereas novice candidates could not. Here, experience may have been the key factor that influenced the in-service candidates to do better. A handful of works confirm that brand-new teachers (i.e., novice aspirants) in few cases are less effective than those having at least a few years of experience under their belts [15-17].

According to Huang and Moon [18], experience plays a key role in effective teaching. In our work, the in-service candidates were also experienced enough to conduct classes where they could automatically employ various teaching strategies to reduce the amount of "silence or confusion" among students both in the initial and final teaching. Hence, they did not show any significant impact of training in their teaching style. However, the importance of teacher training was evident in the case of fresher candidates for the parameter of "silence or confusion". Since they were naive teachers, they may have applied their training openly and combined their inborn potentiality with training, and hence, significantly improved in the final teaching.

Similarly, in PT (which was the combination of student talk response and student talk initiation), the novice candidates significantly improved than in-service candidates in the final teaching. This may be explained by considering that initially, the novice candidates could not involve their students during class teaching. However, after they received training, their teaching approach improved because they employed a multi-dimensional approach in education [19]. Moreover, their attitude became more amicable with their pupils, who felt free to open up, enhancing PT during final instruction. It was also apparent that student talk initiation was better in only those candidates whose approach was more perspicuous and friendly. The fact that the experienced candidates did not show any significant impact of training regarding PT may be justified by assuming that those candidates have become seasoned with their old teaching styles and could not deviate from that point where students were passive learners. This finding echoed Li et al. [20]. They reported that modern teachers are changing the socio-emotional climate of a classroom where students are participating more actively than being rigid rote learners.

Conclusion

The findings revealed that the teacher training subjugated more novice teachers than experienced ones. In-service teachers did not display significant uplifting in all aspects due to their prior perception. This investigation supports the fact that no single component among experience, the pedagogical trait and the training is the only determinant to make an effective teacher; yet, the importance of the training can never be ignored. These findings could surely be a stepping stone to understanding the impact of teacher training on experienced and novice teachers.

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COEXISTENCE MODEL OF ENVIRONMENTAL EDUCATION

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ABSTRACT

Environmental Education is as old as human civilization and culture. The first environmental education started when human first reconciled with nature. The fate to environment is entwined with every life that inhabits on this planet. Environmental education is compulsorily being taught in all schools and colleges since Belgrade charter, yet today we are struggling with various environmental problems. These problems are being increased in the proportion with increased environmental awareness. This has raised a question mark over the effectiveness of prescribed environmental education. All the problems of today generated by human being are a result of not having the true knowledge and understanding about whole existence. Madhyasth Darshan – Co-existentialism (Jeevan Vidya) is present a proposal of effective model of environmental education which emphasis on transformation of consciousness from animal to human, human to divine human consciousness. When a right understanding is developed among human being, human will be free from all kinds of conflicts and prosperity will be occurred in family, fearlessness in society and coexistence in nature. Wish for Universal-Goodness :Earth may be Heaven, May humans may be godly, Dharma may be fulfilled, goodness may arise always.

Key Words: *Coexistence, Existence, Environmental Education (EE), Madhyastha Darshan.*

Background of the study

Environmental education is as old as human civilization and culture, It firstly started when human first reconciled with nature. The fate of environment is entwined with every life that inhabits on this planet. EE has long been considered as a crucial aspect of our existence. The memorable event which paved the way for the present environmental movement was declared of 22nd April 1970 as the first Earth Day. With the UN Conference on the Human Environment in Stockholm, Sweden held in 5th -16th , June 1972, EE was globally acknowledged and realized environmental education must be considered as the key to address environmental challenges all around the world. UNESCO and UNEP generated major declarations namely the Stockholm declaration, the Belgrade charter held in Belgrade, Yugoslavia on October of 1975 and the Tbilisi declaration in October 1977 for guiding the course of environmental education. Transformation in environmental law in India began in 1985 when an Indian lawyer, M.C. Mehta, persuaded India's Supreme Court to rule that Article 21 of the Indian Constitution, which guarantees each citizen the "right to life," necessarily includes the "right to a healthy environment." In 1991, Mehta obtained the primary Supreme writ , requiring mandatory environmental education within the least levels of Indian education to satisfy the basic duties of citizens to "protect and improve the natural environment," as began in India's Constitution. In December 2003, court order requires that green curricula be taught in all of India's states, EE is compulsorily being taught in all schools and colleges since 2003, yet today we are struggling with many environmental problems as there is major depletion in forest wealth leading to drastic climatic changes because of greenhouse effect. All this is often occurring at such a quick phase and to such an extent that the very notion of progress and development has become a paradox. The world scenario is not only restricted to the economically weaker nations or developing nations but its effect is being felt by the developed nations also. EE is being taught by

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world but the level of environment is also being worst in place of improvement. It is clear that how effective are the current environmental education. Now the question arises, why is this environmental education not effective? What should be an effective education instead? What should be the design of that education? As an answer to all these questions, The Coexistence Model of Education which is based on Madhyast darshan (philosophy) provided by Shri A.Nagraj is presented to us as an alternative.

The Coexistence Model of Education

Madhyastha Darshan : It illuminates the inherent order in the existence. It is free of mysticism. For realization of human goal, it considers co-existence in the whole existence, mutual fulfillment and cyclicity in nature, nature friendly ways and behavior in society, value-based justice in family and contentment with right understanding in an individual.

Aim of Environmental Education

The goal of environmental education should be as following along with given in Belgrade Charter :

1. To enable every human to use their ability of imagination to understand the realities of existence and human life as they live spiritually, intellectually, emotionally (in behaviour) and in occupation (materially).
2. Enabling the transformation of human consciousness from animal to human, human to divine-human & its expression in living is thus the basic purpose of all kind of education.

The objective of Environmental Education : Along with the Tbilisi Objectives (Awareness, Knowledge, Attitudes, Skills, Participation) of environmental education the following objectives should be included in education: -

1. Understanding human conduct, existence and co-existence.
2. Interrelation and cyclicity between material order, bio-order, animal-order and human-order.
3. To enable mental healthiness or intellectual, social and natural balance, To bring qualitative changes from inhuman characteristics to humane characteristics and nature.

Content of Environmental Education:

According to The Darshan environmental education should be consist of knowledge, science and wisdom which covers consciousness and material realities and their inter-relationships -

Knowledge = How and why things exist in reality.

Wisdom = Purpose and laws of living or what to do.

Science = How to do – in behaviour, work and mind (Science = behavioural science or values, material science and skills) and live.

The whole content of EE is the study of conscious (Jeevan) activities along with physical, chemical activities, leading to behavioural, mental, social and natural balance.

This content covers the dimensions below :

1. **Self-education (Jeevan Vidya)** – understanding myself, my activities, goals and how I am conscious, the causes for my happiness and unhappiness, my aspirations and fears as they are, in reality.
2. **Behavioral education :** (value education)- In Family: understand, recognized and fulfilled the relationships with other humans & intrinsic values in living. In Society: understanding how the human race is one and human religion are one and how human society is formed and what our common goals are. Learning to measure in family, and therefore the roles, duties and responsibilities, like Seva or service in the family. Human history. Understanding social laws and human values and how to live in them.
3. **Material education :** (Vastu vidya): Skill-based occupational education: Learning useful skills and using my hands and feet on the rest of nature. Understanding the physical-chemical processes in nature and how they need to evolve, their innate nature and characteristics.
4. **Ecological education :** Understanding how the process of evolution from matter to plants, animals and human beings their inter-relationships and how they are in harmony and how to interact with and live with them in a harmonious manner. Understanding natural law.

There should be an environmental nation of all kind of education, it is the process of transferring this

understanding or right values (sanskar) from the teacher to the student enabling the student to have these impressions of reality and live accordingly.

These are the lines to be realized and for understanding the entire environment:

1. Existence is coexistence : Existence consists all the physical-chemical and conscious-entities which are inseparably, eternally and actively present in universal space. Existence is stable means there is no any increase or decrease and limit in existence, there is orderliness & harmony also. Each unit is organized within itself and participates harmoniously with the overall orderliness.

Space : Space is everywhere means Omnipresence and in a state of zero activity. All activities in the form of units are in space. Space is energy in the form of equilibrium, energy itself, manifested in units as energy or it is a fundamental source for energy in Existence or the Universe. Space itself is transparent, consciousness and knowledge. All units are soaked in space. There is space both inside and outside the unit, it is mediating and complete-state. There is no any change in the state of space. All changes are only found in units.

2. There is evolution in existence: Nature continuously manifests effort, motion, and constitution. There is a development progression or evolution in atoms. Hungry atoms (atoms with less particles than needed) and emissive atoms (atoms with more particles than needed) are statuses of development progression, which manifest as an outsized sort of atoms. The central part (nucleus) found in every atom is the Mediating activity. Therefore, attractive and repulsive activities and relative forces (in every atom) are restrained and guarded.

3. There is development in existence: Evolution takes place in the atom. The progress which takes place in existence is in the atom. After constitutional completeness and becomes conscious in the form of the conscious atom or jeevan, Physio-chemical nature itself attains the conscious-plane. The conscious atom has 61 particles of which 1 is in the centre and the others 60 are distributed in 4 orbits, in the first orbit 2 particles, 8 in the second orbit, 18 and 32 are in the third & fourth orbit. This is the constitution of the conscious atom. Atma, buddhi, Chitta, vritti and mun are the respectively named.

These conscious atoms have the activities of tasting, weighing, contemplation, comprehension & realization in state and selecting, analysis, imaging, determination & evidentiality in motion. The conscious unit is weightless, has a shape & occupies space and not react with any physio-chemical unit. The conscious unit becomes free of the bondage of weight, bondage of molecular formation and becomes equipped with the bondage of the will to live immediately on formation. The body is means of its expresses and activities, this will to live via the body, using the brain as the medium of interaction with the body. Units in the animals are a combined form of conscious unit and physio-chemical body and are also a part of nature. A human being is constituted with a physiochemical body and the conscious unit and is also a part of nature.

Universal Harmony

Coherence and universality in the four aspects of human-living (work, behaviour, thought, and realization), five statuses (individual, family, society, nation, and inter-nation), and the ten staged family rooted self-organizing orderliness.

Madhyasth Darshan

Co-existentialism has proposals for the above, within the sort of words that time to those realities. On Studying these realities with the aid of words, and using the ability of imagination present in us, able to have an understanding of these realities in our own right and then Earth maybe Heaven, May humans may be godly, Dharma may be fulfilled, goodness may arise always.

Conclusion

EE has long been considered a crucial aspect of our existence. The memorable event which paved the way for the present environmental movement was declared of 22nd April 1970 as the first Earth Day. With the UN Conference on the Human Environment in Stockholm, Sweden held on 5th -16th, June 1972, EE was globally acknowledged and realized environmental education must be considered as the key to address environmental challenges all around the world. UNESCO and UNEP generated major declarations namely the Stockholm declaration, the Belgrade charter held in Belgrade, Yugoslavia in October of 1975 and the Tbilisi

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ATTITUDE OF DISTANCE EDUCATION STUDENTS TOWARDS ONLINE ASSESSMENT SYSTEM

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ABSTRACT

This study aims to study the attitude of distance education students towards online assessment and to present the relationship of attitude with gender, age and locality. In this study, the sample includes 365 students from Annamalai University Distance Education. T-test results for attitude towards online assessment according to gender, age and locale have been presented. As a result, it indicates that the attitude of distance education students towards the online assessment system is favourable. There is no significant difference between the mean scores of Male and Female Students, Students below 30 years old and above 30 years old and Students from a rural area and urban area with respect to attitude towards the online assessment system.

Keyword: *Attitude, Online Assessment, Distance Education Students.*

Introduction

Educational assessment is the systematic process of documenting and using empirical data on knowledge, skills, attitudes and beliefs. By taking the assessment, teachers try to improve student learning. Assessment can be focused on the individual learner or all individuals together, like the whole class, an institution or a specific program. Formative assessment will give you an overview of your students at the beginning of your instruction. It allows you to have still the chance to improve your instruction. Summative will provide you with the outcome of the whole instruction.

According to Keegan (2002), the definition of distance education can be summarized as "teaching and learning in which learning normally occurs in a different place from teaching". He further states that materials and support structures are planned and prepared by an educational organisation that uses technical media to unite teachers, learners, and content in distance education. Keegan's description of the distance education environment highlights various interacting components of distance education such as instructor, students, and content. Information and communication technology makes interaction in this environment possible, where every component plays a significant role in producing the desired outcome. Online Assessment uses digital technologies to create, distribute, and provide formative, summative, diagnostic, or self-assessment feedback. Technological developments have afforded new ways of assessing student learning and providing feedback. Online assessment is a scoreused to measure specific aspects of information for a set purpose where the assessment is delivered via a computer connected to a network. Most often, the evaluation is some type of educational test. Different types of online assessments contain elements of one or more of the following components, depending on the assessment's purpose: formative, diagnostic, or summative.

An attitude is a hypothetical construct representing an individual's degree of like or dislike for an item. Attitudes are generally positive or negative views of a person, place, thing or event. Attitudes of people, their behavioural tendencies, formed in social conditions during an individual's life, seem to be an essential indicator of behaviour and experience. So far, there has not been a unified definition of the attitude term. Measuring attitudes has a vital role in analysing students behaviour because it is known that there is a strong connection between attitude and behaviour. Talking about Online Assessment, a favourable attitude of students shows a greater probability that they will accept the new evaluation system.

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Significance of the Study

Assessment is an integral part of the learning process. The traditional practice of assessment has changed to meet the need of contemporary society. The credibility and reliability of assessment procedures is a question of serious debate in the Distance Education system. There are three types of assessment qualities, which are essential for effective assessment. They are validity, reliability and fairness (Makamane, 2011). For an assessment system to be valid, care should be taken to verify whether the purpose of the assessment has been achieved or not. Reliability entails the extent to which assessment is free from errors of measurement. An error-free assessment system is treated as a reliable system. Fairness in assessment speaks about the objectivity of assessment and making assessment free of subjective judgment (UNESCO, 2006). So, Online assessments can give you instant feedback, unlike paper examinations in a traditional classroom learning session. Automated online assessments give you the option of taking practice tests whenever you want. Students don't always have to be in a classroom setting to take assessments. Some assessments are Internet-based, which allows the student to take the test at home or anywhere else he likes. Electronic assessments enable teachers to evaluate the performance of the group against the individual quickly. Report-generating capabilities help teachers identify learning problem areas for the group and individual students. Online assessments take up less storage space in respect to keeping records than paper. All data can be stored on a single server. Teachers can mix and match the question styles on exams, including graphics and make them more interactive than paper exams. It eliminates human error in grading and cuts down on cheating. Therefore, it is necessary to examine the attitude of distance education students towards the online assessment system.

Objectives of the Study

The following are the objectives formulated for the present study.

1. To find out the level of attitude of distance education students towards online assessment.
2. To find out whether there is a significant difference between male and female students with respect to attitude towards online assessment.
3. To find out whether there is a significant difference between the students below 30 years old and above 30 years old with respect to attitude towards online assessment.
4. To find out whether there is a significant difference between the students from a rural area and urban area with respect to attitude towards online assessment.

Hypotheses of the Study

1. The level of attitude of distance education students towards online assessment is unfavourable.
2. There is no significant difference between male and female students with respect to attitude towards online assessment.
3. There is no significant difference between the students below 30 years and above 30 years old with respect to attitude towards online assessment.
4. There is no significant difference between the students from a rural and urban area with respect to attitude towards online assessment.

Method

The purpose of this paper is to measure distance education students' attitude towards online assessment and to discover the influencing factors to have relevant results for the future initiatives of educational institutions that plan to adopt an online assessment system. Determining students' attitude towards online assessment represents an important stage in predicting the adoption of specific behaviour. So, the normative survey method was employed in the present study.

Tool Used

This research was conducted using a questionnaire developed through exploratory research. After overseeing the literature review and choosing the analysis models, the questionnaire was structured in three parts as objectives: analysing technical abilities, measuring students' attitude towards online assessment. The variables selected by the investigator is the attitude of distance education students towards online assessment. For this, the investigator used an Attitude Towards Online Assessment System (ATOAS) constructed and standardised by Sivakumar, R. (2019).

This tool is of Likert type, and it has 25 statements. Each statement in this attitude scale set against a four-point scale, i.e. Strongly Agree, Agree, Disagree and Strongly Disagree. A score of 4 is given to the respondents strongly agree, 3 for agree likewise 2 and 1 was given to disagree and strongly disagree. The maximum score for this attitude scale is 100. Therefore, a score above 60 indicates a favourable attitude towards online assessment, and a score below 60 indicates an unfavourable attitude towards online assessment.

Sample for the Study

The random sampling technique was adopted to select the sample for the present study. The present study consists of 365 students studying in the Directorate of Distance Education, Annamalai University, Tamilnadu. The data were collected through Google Form. Google Forms is a web-based app used to create forms for data collection purposes. Students and teachers can use Google Forms to make surveys, quizzes, or event registration sheets. Use Google Forms to collect any amount of data for a wide variety of purposes.

Statistical Techniques Applied

Statistical Techniques serve the fundamental purpose of the description and inferential analysis. Descriptive and differential analyses were used in the study.

Hypotheses Testing

The hypotheses formulated for the present study were tested by applying statistical techniques. Descriptive and Differential analyses were used.

Hypothesis 1: The level of attitude of distance education students towards online assessment is unfavourable.

Table 1

Mean difference of the Distance Education Students with respect to Attitude towards Online Assessment System

Variable	N	Mean	S.D
Attitude towards Online Assessment System	365	66.27	8.65

The above table 1 reveals that there is a favourable attitude towards the online assessment system. This indicates that the level of attitude of distance education students towards online assessment is favourable.

Hypothesis 2 : There is no significant difference between male and female students with respect to attitude towards online assessment.

Table 2

Mean difference of male and female students with respect to attitude towards online assessment system

Variable	Category	N	Mean	S.D	Calculated 't' Value	Remark
Attitude towards Online Assessment System	Male	155	65.59	7.56	1.3	NS
	Female	210	66.78	9.36		

(At 5% level of significance table value of 't' is 1.96)

The above table 2 reveals no significant difference between the mean scores of male and female students with respect to the attitude of distance education students towards the online assessment system. So, the online assessment system never influences the Gender factor.

Hypothesis 3 : There is no significant difference between the students below 30 years and above 30 years old with respect to attitude towards online assessment.

Table 3

Mean difference of students below 30 years and above 30 years old with respect to attitude towards online assessment system

Variable	Category	N	Mean	S.D	Calculated 't' Value	Remark
Attitude towards Online Assessment System	Below 30 Years	135	66.11	7.94	0.27	NS
	Above 30 Years	230	66.37	9.06		

(At 5% level of significance table value of 't' is 1.96)

The above table 3 reveals no significant difference between the mean scores of students below 30 years and above 30 years old with respect to attitude towards online

assessment system. So, the online assessment system never influences the Age factor.

Hypothesis 4: There is no significant difference between the students from a rural and urban area with respect to attitude towards online assessment.

Table 4

Mean difference of students from rural and urban area with respect to attitude towards online assessment system

Variable	Category	N	Mean	S.D	Calculated 't' Value	Remark
Attitude towards Online Assessment System	Rural	116	66.61	8.34	0.5	NS
	Urban	249	66.12	8.81		

(At 5% level of significance table value of 't' is 1.96)

The above table 4 reveals that no significant difference between the mean scores of students from a rural and urban area with respect to attitude towards online assessment system. So, the online assessment system never influences the Locality factor.

Conclusion

This study was conducted to examine the level of attitude of distance education students towards online assessment system. As a result, it indicates that the attitude of distance education students towards the online assessment system is favourable. There is no significant difference between the mean scores of male and female students, students below 30 years old and above 30 years old and Students from a rural area and urban area with respect to attitude towards the online assessment system. Distance Education Institutions implement the online assessment system to accomplish reliability of the total system of assessment; they should manage it with lesser error and objectivity in scoring. It develops confidence in the distance learners; the assessment system may be transparent and as fair as possible.

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COMPARATIVE STUDY OF SERVICES OFFERED BY AN ONLINE COLLABORATION TOOL AND A LEARNING MANAGEMENT SYSTEM WITH REFERENCE TO ONLINE EDUCATION

ABSTRACT

A Learning Management System (LMS) is a niche software used in online education. In contrast, an Online Collaboration Tool (OCT) is a generic software characterized by ease-of-use and ubiquitous access through mobile devices. This ensures familiarity and comfort of OCTs among stakeholders in an academic institution. Also, OCTs generally provide financial-free and technology-free access to their users. This scenario invites the possibility to use it in the online education domain. This article follows the Design and Creation approach to explore this possibility and prescribes a framework.

Keywords : *Learning Management System (LMS), Online Collaboration Tool (OCT), Design and Creation Research Methodology*

Introduction

A Learning Management System (LMS) is a niche software application used in online education as compared to the generic nature of the Online Collaboration Tool (OCT) (Lomas et al., 2008). Collaboration tools can be either of a non-technological nature, such as paper, flipcharts, post-it notes or whiteboards (Nunamaker et al., 2014). They can also include technology tools such as online software applications such as OCT.

Background of the Study

LMS is a dedicated software category for online education, whereas OCT is a general-purpose one. Moodle, Open edX are prominent examples of LMS, and IBM Lotus Notes, Google Apps, Microsoft Teams are OCT.

Significance of the Study

The ubiquitous nature and popularity of collaboration tool ensure the availability of various stakeholder accounts on these platforms. This scenario invites the possibility to use an OCT for online education purpose. This necessitates a study of services offered by an OCT with reference to the requirements of online education.

Research Objective

An LMS offers its services in synchronization with online education requirements as it is specifically designed to support it. The same is not valid for an OCT as it is intended to help online collaboration activities and not those involved in online education. Therefore services offered by an OCT needs to be mapped with the requirements from online education before considering its applicability in online education. This can be achieved through its service-level comparison with LMS. This can be summarized into a research objective as follows;

Perform a comparative study of services offered by an OCT and LMS with respect to online education guidelines.

Research Methodology

Design and Creation research methodology found to be suitable for this research (Oates, 2005). It will result in a framework as an artefact after exploring the capabilities of an LMS and an OCT.

Services Provided by an LMS

As LMS is an education requirement exploring designed to support online education, its offered services reflect expectations of online education. It is supposed to be used by various personnel involved in an academic institution. Access to this personnel is defined as per specific roles assigned to them, such as Student (S), Teacher (T),

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Class-Coordinator (C), Head of Department (H), Head of Institution (I) and Technical Administrator (A). An Academic Institution's expectations from an LMS are derived from online education requirements specified by regulatory bodies like University Grants Commission (UGC). UGC defines a 4-Quadrant Framework (Government of India, 2017) for Online Programmes (Figure 1).

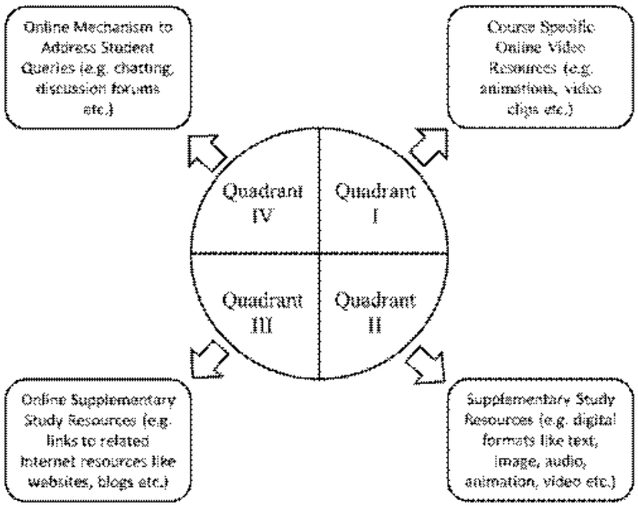

Figure 1: UGC's 4-Quadrant Framework for Online Programmes

Apart from these four quadrants, an institution may expect few more services to encompass other activities involved in the teaching-learning process, such as;

- Online Attendance of Students
- Online Submission of Assignments
- Monitor Course/Subject Level Activities
- Monitor Department Level Activities
- Online Conduction of Tests/Quizzes
- Online Submission of Feedbacks
- Monitor Class/Programme Level Activities
- Monitor Institution Level Activities

The services expected from LMS are an accumulation of all these requirements mapped appropriately to various roles (Table 1).

Table 1

LMS Specific Roles and Services

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LMS Specific Services	LMS Specific Roles in Institutions					
	S	T	C	H	I	A
Manage(Create/Remove) Virtual Classrooms						√
Manage (Add/Delete) Classroom Members			√			
Upload Notices on Virtual Notice board			√			
Access Notices from Virtual Notice board	√	√		√	√	
Manage Time-Table of Academic Activities			√			
Access Time-Table of Academic Activities	√	√		√	√	√
Conduct Online Sessions (Real-Time Access)		√				
Attend Online Sessions (Real-Time Access)	√			√	√	
Take Online Attendance		√				
Upload Recorded Sessions		√				
Access Recorded Sessions	√			√	√	
Upload Study Resources*		√				
Access Study Resources	√			√	√	
Upload Supplementary Study Resources		√				
Access Supplementary Study Resources	√			√	√	
Upload Online Test/Quiz		√				
Take Online Test/Quiz	√					
Upload Online Assignment		√				
Submit Online Assignment	√					
Upload Online Feedback Form			√			
Fill Online Feedback Form	√					
Online Mechanism to Address Student Queries	√	√	√	√	√	√
Monitor Course/Subject Level Activities		√				
Monitor Class/Programme Level Activities			√			
Monitor Department Level Activities				√		
Monitor Institution Level Activities					√	

* in digital formats like text, image, audio, animation, video etc.

Services Provided by an OCT

The description of OCT suggests that it performs three services to enable successful collaboration among the participants;

- Communication: to allow information exchange among participants through digital modes like e-mail, chatting, forums etc.
- Coordination: to schedule, notify and synchronize the activities among participants
- Cooperation: to allow discussions to work in real-time

OCTs generally have a role-free lateral architecture where everyone is a regular user and can perform the above services. In addition to them, they can also control access to their own resources Table 2).

Table 2

OCT Specific Roles and Services

OCT Specific Services	OCT Specific Roles
	Normal User
Communication	√
Coordination	√
Cooperation	√
Access Control of Own Resources	√

Comparative Analysis of Services offered by an LMS and an OCT

Comparative Analysis is a form of research, often using mixed methods, which aims to draw upon similarities and differences among a set of entities. Table 1 and Table 2 provide a background for comparison between services of LMS and OCT. An analysis will directly reveal a service gap between service expectations from an LMS and services offered by an OCT. The same will indirectly exhibit the service gap between services provided by an OCT and requirements of online education.

Finding and Interpretation

It is possible to control participation and access models of OCT as the organization model is an inherent part of implementation as per direct requirements of LMS and indirect online education requirements. The findings of analysis can be summarized into a three-step framework as follows:

Step 1: Convert the De-Centralized Organization Model of an OCT into Pseudo-Centralized Organization Model through the technical administrator's interventions.

Step 2: Convert the Open-to-All Participation Model of an OCT into Selective Participation Model through management of User Accounts.

Step 3: Convert the Lateral Access Model of an OCT into a Hierarchical Access Model by managing access rights to the resources.

Educational Implications

The proposed framework will allow an educational institution to adopt an OCT to support its online education activities. This will free the institution from the management of technical details involving an LMS. Also, the generally financial-free nature of an OCT will make this approach economically feasible. The ubiquitous access to OCT supported by its user-friendly interface will ensure its easy adaption by various stakeholders involved in the institution.

Conclusion

This paper explored the possibility of using an OCT for online education following the Design and Creation methodology. The analysis of expected and offered services by an LMS and an OCT online education requirements resulted in a framework. Service mapping was further conducted using the organization model, participation model and access model. The direct comparison of an OCT with an LMS has given an insight into its applicability in the online education domain. Intervention by the Technical Administrator, management of user accounts, and control over access rights was critical to using an OCT in online education.

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SMARTPHONE: UNREST AND MENTAL HEALTH ISSUES AMONG STUDENTS

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ABSTRACT

Student development plays an integral part in the nation's progress. With the advent of smartphone with the internet, dimensions of development have expanded. Recently, ICT, especially smartphones, has become an essential part of the everyday life of the younger generation and even the older generation to some extent. The smartphone revolution has given the world to the students in their own hands. The students heavily rely on a smartphone to gratify their needs, be it entertainment, information, fun, learning etc. The problematic use of this device leads them to unrest, anxiety, stress, distraction, seclusion from the actual world and indulgence in the virtual world, which poses a threat to their mental health. This paper attempts to contextualise the students' psychological and behavioural problems resulting from the mishandling of their smartphones.

Keywords: *Smartphone, Unrest, Mental Health, Nomophobia, Internet*

Introduction

Technologies have turned into an essential place in student's life (Salehan and Nehahban, 2013). Today, thinking of life without a smartphone is very difficult. The mobile phone was introduced in the 1980s, and its use became extensive by the mid-1990s. Indian marketplace is one of the leading in the world (Dixit et al., 2010). The survey conducted by e-market statistic in September 2019 shows that China got the first rank all over the world with 782.85 million smartphone users, followed by India with 374.89 million smartphone users (Diwanji, 2019). We are marching ahead towards a period where smart phones are not just for calling, chatting and texting purpose, but also for the use of the internet and its interconnected behaviour (Sarwar and Soomro, 2013). Usage of social networking site tremendously increased in India, i.e. Facebook, WhatsApp, Twitter etc. Facebook users in India is more significant than in America.

Further, they revealed that 24 Crore persons are using Facebook in America, and in India, there are 24.1 crore users (Facebook spectator index, April 09, 2019). Thus, smartphone culture has affected all aspects of students' life which created unrest and mental disturbance among students. The Internet has unexpected expansion in range and figures together whole the world of its users (Usman et al., 2014). Too much smartphone usage is causing a change in individual's behaviour and lifestyles (Gupta, 2018). On the other hand, various problems related to smartphone, i.e. cyberbullying, social isolation, financial difficulty, tiredness and low success etc., lead to unrest and mental health problems (Kirschner and Karpinski, 2010). The students feel insecure in a particular situation when he/she forgets phone at home or do not get signals from a mobile tower. In other words, it is an irrational fear of losing smartphone contact known as Nomophobia (Yildirim and Correia, 2015). This type of problems creates unrest and mental disturbance among students.

Unrest and mental health issues

Smartphone usage is one of the primary needs of the student's day to day life, which has certain advantages and disadvantages (Saxena & Chauhan, 2021). As appeared in The Tribune (December 24, 2019), the Indian Council of Medical Research (ICMR) revealed that one in every seven Indians suffered from a mental disorder of varying severity in 2017 (Tandon, 2019). Around 351.4 million

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people in India use social networking sites in 2019, which is expected to reach 376.1 million users in 2020 and 400.3 million users in 2021. According to (Statista 2019), India's primary trendy social networking services are YouTube and Facebook, followed by WhatsApp. This technology gives opportunities to all the members of the society for their welfare. Still, on the other hand, it may generate adverse effects on its users, i.e. addiction, negative thoughts, and do not control impulse behaviours (Billieux et al., 2007). This can create unrest and mental health problems among its users (Ting et al., 2011).

Cyberbullying

The problem of bullying with innovative technology is cyberbullying. It causes top-level despair and stress for sufferers than conventional harassment leading to suicidal attempts after reading the upsetting remarks (Kowalski, 2010). This is the primary cause to create unrest and mental disturbance among students.

Depression

World Health Organisation surveyed depression and found that 264 million people are affected with depression, and further they revealed that women are more affected than male. Depression is characterising by unhappiness, Insomnia, lack of attention and fatigue (www.worldhealth organisation.com, 28 November 2019). This depression creates unrest, disturbing had their mental health (Lee etal., 2015).

Privacy and security issues

The flood of rumours and false information on social networking platforms threatens the students' social peace and privacy (Abdulahi et al., 2014). Which create unrest and mental disturbance among them?

Fear of missing out (FOMO)

FOMO is a new generation phobia resulting from a smartphone (Saxena & Chauhan, 2021). Patrick. J. McGinnis coined the term FOMO in 2004 while studying at the Harvard Business School. Gezgin and Cakir (2016) stressed that FOMO has been found in the young generation more than the older ones who use a smartphone and social media excessively.

Less concentration

Students are reliant on their smartphones. They are continuously disturbed by the loaded application on their smartphone, losing their concentration level on their study or constructive work. This is the reason for student unrest (Lee et al., 2015).

Suggestions/remedies

The researcher gave a few suggestions to cope with the issues related to mental health and unrest among students due to excessive use of smartphones.

Integrate media education

Schools, colleges, and universities should integrate media literacy into their syllabus to teach students about the risk of excessive smartphone usage and how social networking sites affect their physical and mental health. In addition, awareness programmes may be organised in educational institutions frequently to better the students' mental health.

Time management

Students should be aware and trained to follow proper time management to achieve success, effectiveness and productivities of time to execute their plans in a time-bound manner.

Self efficacy

It is essential to enhance self-efficacy by developing self-confidence and belief in oneself. In addition, it may help to reduce unrest among students.

Responsibility of home, school and administration

It is the duty of parents, teachers, and administrators to train students and use smartphones to increase their knowledge and sharpen their skills to reduce hazards.

Guidance and counselling cell

Guidance and Counselling cell should be made more active to decrease the unrest, academic procrastination, deprived mental wellness due to smartphone dependence among the students.

Conclusion

Over the last 15 years, there has been tremendous growth in ICT. The smartphone is one of them; it offers lots of possibilities in everyday life. Smartphone has become a primary need in today's context. A coin has two faces

similarly; the smartphone also has its two faces, i.e. merits and demerits. The smartphone makes our life easier, but on the other hand, it may generate negative consequences due to excessive use. Like other innovations and products of science and technology, its genuine and optimum use must harvest its positive aspects, avoiding negative implications. Students should not use innovative technology for a long time. They had a mental disorder should spend leisure time with their family members and be involved in physical activities to reduce unrest, nomophobia, and mental health issues due to excessive smartphone usage. Further described a constant awareness, counselling, training, monitoring with authoritative restrictions - all in a standardised manner is required for better results.

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UNDERSTANDING ETHICAL ISSUES IN SOCIAL SCIENCE RESEARCH

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ABSTRACT

Research is an organized, socially designed quest for the innovative and improved pursuit of knowledge. Ethics represents an ethos or way of life, social norms for behaviour that distinguishes between acceptable and unacceptable behaviour. Ethics in research are a multifaceted set of ideals, principles, and guidelines that help control scientific actions. Nowadays, these issues have become an essential component in social science investigations. These are very significant for an investigator undertaking research in social sciences involving humans as it examines intricate issues which comprise literary, legal, financial and political processes. These issues indicate that social science researchers need to be concerned with moral integrity to establish that the methodology and the results are trustworthy and applicable. There could be numerous causes due to which ethical standards should be followed while doing research. For instance, ethics foster the fulfilment of the research objectives, gaining insight, enhancing the truth in research by minimising errors that may occur while reporting inappropriate data, distorting or misleading information.

Furthermore, research ethics also emphasise the values which are of social importance. Therefore, researchers should understand their civic conscientiousness, sustain the integrity of personal ideals, and safeguard participants' interests following the global commandments and security principles. This article attempts to discuss the concept of ethics and specifically research ethics, the importance of ethics in research, different ethical issues and the necessity to adopt these moral principles in social sciences research.

Keywords: *Ethical issues, social science research, harm, privacy, deception*

Introduction

The concept of 'ethics in research' corresponds to a composite collection of ideals, principles, and institutional guidelines that help develop and control scientific actions. Eventually, research ethics is the application of scientific principles in action. It is said that these are based on ethics principles used in science, just as general ethics are based on morality. Research is often taken similar to the other expert activities. The ethical accountability in research is somewhat related to norms associated with the research procedure, including interaction among the investigators, moderately with concern for subjects involved and organizations undertaken for study, involving accountability of the utilization and sharing findings of the research. Several standards must be weighed besides other issues and amended in tune with them while making particular appraisal in individual cases.

Researches in social science have been extensively concerned with ethical dilemmas. It deals with complex processes, which include lawful, fiscal, cultural, and political processes. This intricacy indicates that the research social science must enhance "moral integrity" to ensure that procedure followed and results are trustworthy and applicable. Policies by different Universities assert that research involving human participants must follow the National Statement on Ethical Conduct in Human Research (2007). This policy applies to researchers who are engaged in some research work. In developing nations, where societies are multicultural, literary conditions and safety are the crucial problems for social science investigator during their fieldwork. These circumstances can create states

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where the researcher finds it hard to get a consent letter from the community and cause delays in undertaking any investigation.

Importance of research and research ethics

Research refers to a planned, structured pursuit towards innovative and improved insight to contribute to society. Methodical knowledge is of great significance. Numerous research findings prove valuable for the betterment of social circumstances. The paramount duty of a researcher is to explore the truth behind any phenomena. Consequently, scientific integrity is an essential feature of ethics in research. Compassion and explanation are fundamental for conducting any research. It leads to exposure to the diverse, however logical analysis of similar components.

Nevertheless, the shortcomings and indecisiveness linked with any work don't help investigators escape from the compulsion to ignore subjectivity and struggle for consistency and transparency in the interpretation of research. However, in some subjects, there is contradiction over the elementary examination of logical premises. Also, sincere recording and reliable analysis constitute the significant necessities, irrespective of the researcher's opinion with an observation to theory. The research in the humanities and social sciences is characterized by the investigator's opinion about society and humanity, an element that is generally inspiring. In other words, it can be said that all disciplines have similar ethical obligations while conducting research, e.g. need for motivating and pertinent research topics, certifiable records, objective discussion of disagreeing viewpoints and vision to improve one's imperfection. The fundamental ethical principles in research are built upon universal moral values of the social settings (Walton, 2013).

Ethical Dilemmas in Research

According to Robson (1993), social science research needs to address these ten questions :

1. Including participants without their approval or awareness
2. Forcing them to take part
3. Not revealing the actual purpose inherent in the investigation
4. Misleading subjects
5. Convincing participants to perform activities retreating the self-respect
6. Disobeying rights of independence
7. Causing corporal or psychological burden to the subjects
8. Intruding the participants' privacy
9. Taking way the benefits from some subjects
10. Not dealing with the subjects objectively or with concern or dignity

Numerous complex issues may arise while applying ethical principles to social science research. The above discussed ethical dilemmas have been presented in a detailed manner as under:

Assuring the safety of the Human Subjects

Every researcher has to fulfil his responsibility of protecting the participants in an investigation. According to the American Educational Research Association (AERA) Ethical Standards, they must respect the rights, confidentiality, and self-esteem of the population under study and the organisations' reliability where the research has been conducted. Every researcher, irrespective of their field of study, should seek approval, safeguard from harm and fraud and guarantee the confidentiality of the subjects. Consent refers to how a person chooses whether or not to take part in the study. The investigator must ascertain that the issues should possess a clear idea about the objectives and methodology employed for the work. It can be taken directly or by making use of a substitute. Direct consent is mainly favoured because the approval is taken from the person who is directly involved. Substitute consent can be taken in the situation when the individual doesn't have the authority to make decisions or is reliant on others, for instance, children below 18 years or persons having mental instability. The direct and the substitute consent need to fulfil the conditions of the learned approval. From the legal point of view, there are three elements of informed consent: competence, information and willingness.

Competence indicates the individual's capability to obtain and preserve data. The ability to assess the information received and choose based on this is an essential element of competence. Determination of whether the information has been communicated to a subject efficiently is based upon the substance and manner. The information must be designed and accessible so the issues can easily comprehend it. Voluntary consent deals with every person's ability to implement the free command of choice without the interference of pressure, fraud, deception, threat or other

forms of restraint or oppression. The right to exercise option must apply to every step of the research process. All these three elements of consent altogether greatly influence how the research be designed and implemented.

The primary issue in all the research is that no human being gets hurt while acting as a subject recommended by APA and AERA code of ethics. In the context of research ethics, harm is defined as containing bodily pain or grief, including mental trauma, individual discomfiture, or dishonour that may badly affect the subjects in a meaningful manner. Several studies may be distinguished as high risk for harm due to the people involved. By the characteristics related to age or disability, an individual can be termed as comparatively ineffective in making decisions while choosing whether or not to serve as a research subject. People who are institutionalized or imprisoned, prisoners, disabled persons, or persons suffering from severe cerebral ailments, are more likely to consent for their participation in the research either because they "should demonstrate good indication of good deeds" or get the recognition of their subordinates.

Furthermore, it is the responsibility of the researcher to decide beforehand to what extent of hazards, trauma or pain should be considered dangerous. The approach which can be used to address the issue of harm is the cost/benefit ratio. It involves assessing the potential benefits of the research with the possible risks faced by the subjects. If the study's help is more than the potential harms, it is considered ethical, and vice-versa also holds. Research is said to be valid when the possibility of threat is minor. In addition, the investigator should also think about how long the harmful effects will last after the research is finished and if they are likely to be repeated.

Privacy

The right to privacy indicates that an individual has the choice not to become a part of any investigation, not to respond to the questions, not to be interviewed, not to have them their home intruded into, not to respond to telephonic messages or emails and to involve in individual conduct in their own space without the apprehension of being examined. Along with these ethical issues, confidentiality has emerged as the most valuable right. Asking for privacy is an act of isolation or confidentiality-isolated from open observation or information. In examining the confidentiality related issues while conducting the research, various factors must be explored. First, the importance of the report that helps develop and develop concerning the person or group understudy needs to be taken care of. Secondly, the background in which the research is carried out may also be crucial in considering a probable invasion of privacy. On the one hand, some circumstances are taken as confidential forever, such as an individual's home.

On the other hand, there are situations in which confidentiality cannot be usually assumed, for instance, in a public garden or market. The investigator should examine the circumstances under which the information is gathered if the excessive invasion of privacy has to be avoided. The concluding discussion related to confidentiality involves how open the data is.

Deception

Deception in research refers to the deliberate falsification of data related to a study's objectives, nature, or outcome. In this context, deception reflects either an omission or commission by the investigator with reference to interface with subjects. The omission type of deception indicates that the researcher does not fully notify the subjects about the work's significant areas. Some portion of or all the information is not revealed to them. A commission refers to when the investigator gives forged details about the research either incompletely or wholly. In omission type, the subjects may not be familiar that an investigation is in progress or may only be informed about the same part of the research. In commission deception, subjects usually are familiar with some research or tasks that are uncommon but may be provided deceptive details related to the study's primaryobjective. In both situations, the investigator is misrepresenting the research. The major issues faced by the researchers are the use of deception while seeking consent. Seeking consent is necessary when the subjects are engaged in actions or tasks which may cause harm to them. On the other hand, informed consent is lacking in the researches involving deception. If a study requires deception, subjects must at least be provided data to be acquainted with the probability of menace and then willingly choose either to take part or not.

Conclusion

This paper presents a detailed analysis of the ethical considerations in social science research. The discussions in social science research on human subjects' safety,

consent, avoiding harm and deception, privacy is gaining attention nowadays. There are several concerns for the investigators while surveying social science. These involve the lack of expertise in handling ethical practices, the requirement of cultural sensitivity, safety issues and the outcome of governmental and political rules in different societies. As a result, thoughtful deliberations are required to use ethical approval, which may not be applied universally to varied conditions. Multifarious ethical issues in different circumstances need cautious explanation by investigators researching behavioural sciences.

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COEXISTENCE MODEL...

declaration in October 1977 for guiding the course of environmental education. EE is compulsorily being taught in all schools and colleges since 2003, yet today we are struggling with many environmental problems. It is clear that how effective are the current environmental education. The Coexistence Model of Education which is based on Madhyast darshan (philosophy) provided by Shri A.Nagraj is presented to us as an alternative, It works on human consciousness and develop right understanding which provides resolution within ourselves, prosperity in family, fearlessness in society and coexistence in nature. Thus, this philosophy provides the solution of all kind of environmental problems generated by a human being.

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COVID-19 AND EDUCATIONAL SCENARIO IN INDIA

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ABSTRACT

SARS CoV-2, which causes the disease, is called COVID-19. Coronavirus is a massive family of viruses. The disease was first found in December 2019 in China. WHO has declared COVID-19 as a pandemic as it spread globally. The COVID-19 epidemic is a major challenge in education programs. All the educational institutions, universities, colleges, and schools across the country were closed in India on 16th March 2020. The Government of India has also declared a nationwide lockdown on the 24th of March 2020 as India was on the list of countries affected with COVID-19 Worldwide. In addition, the Government has ordered institutions to cease face-to-face instruction for most of their students, requiring them to switch, almost overnight, to online teaching and virtual education.

For that, the Indian Government has come with many online education or e-learning facilities. Though the Government and many educational institutions intend to help the students in their study amidst this crisis, it, unfortunately, leaves a destructive impact on the students who cannot afford electronic devices. This paper aims to explore the Covid-19 outbreak and its impact on education, particularly in India. The study is conducted through theoretical analysis with the help of an online documentary survey of various journals and news articles. As a result, the Indian Government has given various facilities to overcome this crucial situation by e-learning or online education. But at the same time, the students in rural areas do not have the required financial and infrastructural facilities for digital education. Due to that, the Indian infract is not ready to opt for the online education system in the country. More development is required in the field of internet connectivity, rural electrification, and e-learning.

Keywords: *Covid-19, Education, India, E-learning, Educational Scenario, Online education*

Introduction

A virus with shorter-term and much faster negative consequences, "The Novel Coronavirus Disease" called COVID-19, was declared a pandemic on 12th March 2020 and announced as a global health threat by WHO.[1] This novel pandemic has down the whole education system in India as well as the whole world. This pandemic is widespread across the education system in India and worldwide.

In India, the total infected cases of COVID-19, as reported in January 2020 and on 17th, stood at 3,54,065. To control the spreading of the disease, the Government declared nationwide lockdown for 21 days on 24th March, affecting India's entire 1.3 billion population. On 14th April, the PM extended the nationwide shutdown until 3rd May, followed by a two-week extension that began on May 3 and 17 with much relief. The Government started opening the country on June 1. Lockdown's strategy has destroyed the country's education and economy. This global shutdown contributes to many of the worldwide student population. Many other countries have implemented local closures that affect millions of additional students. The UNESCO estimates that about 32 crores of students are involved.

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Therefore, more in India, including those in schools and colleges.

Some related researches have concluded here. Kachroo (2020) notes that indirect antimicrobial activity, HCQ is a safe anti-inflammatory agent widely used in autoimmune diseases and can significantly reduce the production of cytokines and, in particular, inflammatory factors. Therefore, in COVID -19 patients, HCQ may also contribute to attenuating the inflammatory response. [6]

Lewis (2020) highlights that Covid-19 is a universal issue. All countries must look at how this problem can exacerbate inequality, and all countries need to address it. The full impact of this crisis will not be known for some time, but it is crucial to make sure that girls do not miss out on their education and their futures. [14]

Objectives of the Study

The main objective of this study is to explore the Covid-19 scenario and its impact on education from an Indian perspective.

Research Methodology

This study has made a qualitative analysis to explore the Covid-19 outbreak and its impact on the educational scenario from the Indian perspective. It is based on recent studies on Covid-19 issues and their impact on education published in various journals and newspapers. Furthermore, this Covid19 pandemic trend and educational trend in India has been shown with the help of tables and figures based on WHO and UNESCO report.

Discussion

Covid-19 Scenario in India

The first case of COVID-19 in India, which was originated from China, was reported on 30 January 2020 in Kerala. This pandemic has made its spread all over the country and affected more than 5.8 lakh people. India currently has the most significant number of confirmed cases in Asia [9]. On 10 June, India's recovery of active patients for the first time reduces 49% of all infections. [11] The country has reported new cases of the virus every day since March 5, 2020, and wrote an exponential increment of the total no. of infected. Figure 1 & figure 2 shows the Covid-19 scenario in India.

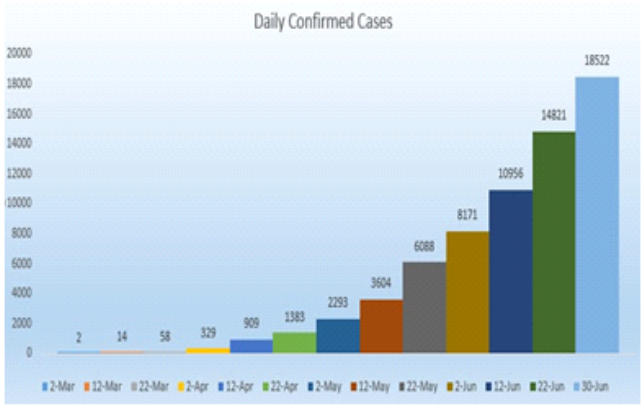


Fig. 1 : Trends of Covid-19 in India; Source: WHO says on Covid-19

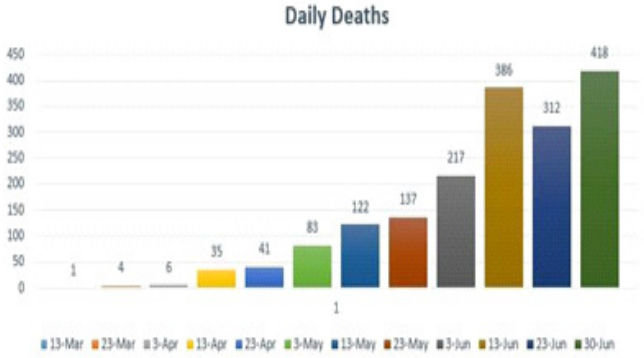


Fig. 2 : Death rate of Covid-19 in India

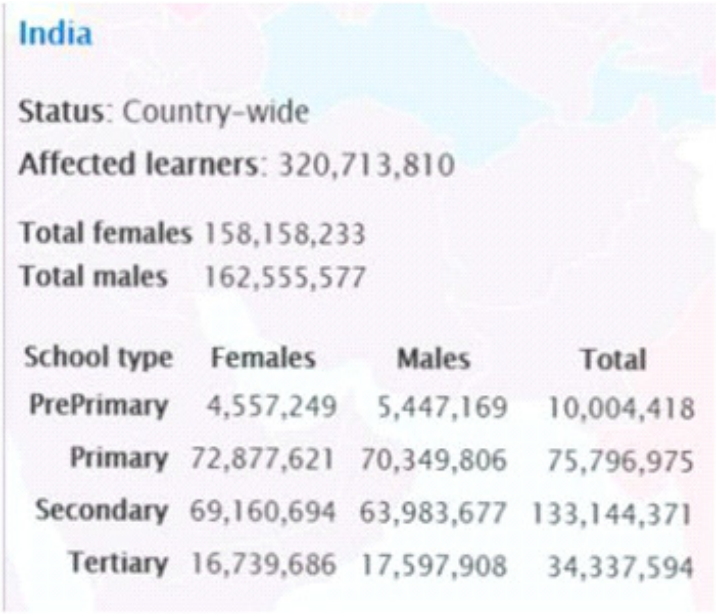
Source : WHO report on Covid-19

The above figure infers that the total number of daily infected cases had started to rise at the beginning of March. Till 30 June, it increased almost exponentially and stayed at 566,840 as of the total number of infected patients. On the other hand, the countrywide death toll reached 16,893.

Educational Scenario in India during this pandemic

The term education can't be described in one sentence as we know that education is part and parcel of everyone's life. Without education, we can't image life as life is education, and education is life itself. Education is one among the scores of sectors that have been severely

affected by the Covid19 pandemic, which directly or indirectly impacts students and education. This is a crucial time for the education sector. Therefore, the government has come up with an e-learning program. Many ed-tech firms have tried to reinforce the event by offering free online classes or attractive discounts on e-learning modules. These initiatives have also met with the overwhelming response of students with a specific start-up reaching a 25% increase in e-learning. Remote learning seems to be an effective solution for students as they provide convenience, mobility, and affordable access to courses. E-learning also comes as an exciting and interactive alternative as compared to classroom teaching.



India

Status: Country-wide

Affected learners: 320,713,810

Total females 158,158,233
Total males 162,555,577

School type	Females	Males	Total
PrePrimary	4,557,249	5,447,169	10,004,418
Primary	72,877,621	70,349,806	75,796,975
Secondary	69,160,694	63,983,677	133,144,371
Tertiary	16,739,686	17,597,908	34,337,594

Fig 3 : Trends of total affected learners from preparing, primary, secondary and tertiary schools

Source : United Nations Educational, Scientific and Cultural Organization (UNESCO) report.

However, Covid-19 has prompted experts to reconsider the standard model of education. Digital education is seen as an effective solution to fill the void of classroom instruction for three to four months while reducing the likelihood of student infection until classes resume. Educational stakeholders should consider integrating digital education with mainstream education.

This transformation will enable inclusive education by making it accessible to all the various geographies in India. Moreover, it will allow educators to come up with customized learning solutions for every student. Technology has brought about a complete revolution in the way we learn today. Each student gets in contact with a world-class education, which is not easy to impart by the traditional white chalk and blackboard teaching method. This new learning is more interesting, personalised enjoyable.

Digital learning has many advantages in itself, as digital learning has no physical boundaries. It has more learning engagement experience than traditional learning. It is also cost-effective, and students get to learn in the confines of their comfort zone. Globally, online education has met with some success. In the case of India, we still have a long way to go before digital learning is seen as mainstream education because students living in urban area have facilities to opt for digital education. However, rural area students do not have the required infrastructure or are financially strong to avail of digital education resources. Building India's digital education infrastructure presently appears to be difficult due to a lack of budget.

Problems Faced by Indian Education System in Covid-19

1. Internet Connectivity: In Lockdown, bringing the education system online was the 1st step taken by many universities/colleges/schools, but Internet connectivity is one of the major problems faced by education bodies and students. According to the 2017-18 National Sample Survey by education report, only 24% of Indian families have Internet access. While 66% of the Indian population lives in the village area, more than 15% of rural households have access to Internet services. For urban families, the proportion is 42%.

According to Telecom Economic Times, India report by the survey, over 7,600 respondents use the Internet at home, 72.60% of the respondents use mobile hotspots, 15% pc usage broadband, 9.68% PC use Wi-Fi dongle and 1.85% pc have poor to no Internet connectivity.

2. Computer/Laptop/Smartphones: While 77% of Indians own a smartphone [2019], only 11% of households possess any type of computer, including desktop computers, laptops, notebooks, netbooks, palmtops or tablets.

3. Power Supply: Around 20% of India's households received 8 hours of electricity, and only 47% received quite 12 hours.

Conclusion

Most of the governments worldwide have decided temporarily to close educational institutions in an attempt to control the spreading of the COVID-19 pandemic. These nationwide closures are impacting over 60% of the world's student population. In addition, several other countries have implemented localised closures affecting millions of additional learners.

From this study and the above data, we conclude that the Indian Government has given various facilities to overcome this crucial situation by e-learning or online education. But at the same time, the students in rural areas do not have the required financial and infrastructural facilities for digital education. Due to that, the Indian infract is not ready to opt for the online education system in the country. So, more development is required in the field of internet connectivity, rural electrification, and e-learning. A systematic and effective educational practice is required to build young pupils' minds, particularly for this concern. It will develop skills that will drive their employability, productivity, health, and well-being in the decades to come in the overall progress of India.

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GRADUATION DAY ADDRESS 12-03-2021

Respected Fathers Rector, Secretary,Principal, other dignitaries, dear professors students and parents, first of all let me thank all of you for inviting me to be in your midst today for this graduation day. Let me also congratulate all the graduates who are conferred with diplomas.

The management, the Principal and the teachers of this great institution also deserve our appreciation for their sincere efforts in moulding these young talents. They should be proud of the academic achievements of their graduates.

Graduation is an event of obtaining degrees and diplomas in the field of study you have been pursuing. It is a day to feel happy and fulfilled for your achievements and success. It is also a day to remember and recall to your minds all those who contributed for your success, this institution, parents, teachers and well wishes.

As you are moving into the world, you need to posses some amount of self esteem and self confidence so that you could face the challenging life situations competently. So, have faith in your abilities. With self confidence you can succeed. New opportunities await you. Unexpected challenges will present themselves to you. Take all these to prove your talents.

You are aware that teachers are the backbone of any educational endeavor. They play a very important role in moulding young minds. They are role models; they act as catalysts. Teaching is not a mere job or occupation to earn money. It is a mission to be carried out with dedication, accountability, commitment and responsibility. Remember the words of WilliamA Ward: 'Great teacher is one who inspires'.

In order to succeed in your profession, you need to communicate effectively. Know what you teach; understand and teach. Use visual aids. Be Patient. Teach with passion. Encourage students to think critically. Use non-verbal communications. Engage students constantly. Ask questions and explain. Make teaching interactive. Accompany the students. Helpstudents develop skills and qualities. Promoteintellectualcuriosity. Curiosity contributes to new discoveries. 'The art of teaching is the art of assisting discovery' says Mark van Doren.

To achieve anything worthwhile in life, we must firmly resolve to work towards it with determination. We must set our sights on the objects of our heart's desire and move forward. When we work hard with attention and interest, we will reach life's goal.

Any country's future growth and development depend on young people and their formation. If the country has to make strides in the path of progress and achievements, we need to provide good educational opportunities for all, irrespective of their economic strata and background. I am happy to note that this college has given you this opportunity and you have benefitted from it.

Education is self-formation. Whatever one learns by reading and reflecting during college years, are nothing but invitations to that person to form oneself to be a better citizen and committed agent for creating a new and brighter society.

Let us remember the words of our Father of the Nation, Mahatma Gandhi

"Politics without principles,
Pleasures without conscience,
Wealth without work,
Knowledge without character,
Business without morality,
Science without humanity,
Worship without sacrifice….
will destroy us"

As educated students you should get motivated to work for creating a society with justice, equality and charity. Lots of people will look at you to be agents of social change and ambassadors of good will. All of you can make a mark in your lives if you are ready to live with values.

The great secret of successful living is to reduce the amount of errors in oneself and increase the amount of truth. An inflow of new, right, health-laden thoughts through the mind creatively affects the circumstances of life.Get the truth into your mind and you will be free of your failures.

Let us think and speak hopefully and positively about everything. Let us pray a great deal. Happiness does not consist in the abundance of things one possesses, nor does it reside in the satisfaction of different specific desires for example, publicity, achievement etc. Rather it consists in overcoming selfishness and possessiveness.

Think of a goal and ponder over various possibilities through which you can accomplish it. Develop faith in yourself and assert that you can achieve it. Others will judge you by what you have already done. But you have to judge yourself by what you are capable of doing.

As graduates you have achieved something in your lives. You are at the threshold of entering into a world full of opportunities. Wherever you may go, and whatever you may do, remember that 'you are unique and special'. You can make a difference. You can be a great teacher.

Let me once again congratulate all of you. Wish you all the best. God bless.

Fr. Dr. S. Ignacimuthu, S.J.
Director, Xavier Research Foundation,
St Xavier's College, Palayamkottai - 627002.

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