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EFFECTS OF BLENDED LEARNING ENVIRONMENT ON STUDENTS' ACHIEVEMENT IN GENETICS IN ENUGU STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY

Areji Jonathan Nwagboliwe*
Onuba Stella Ogechi**

Abstract

The study investigated the effects of blended learning environment on students' achievement in genetics in Enugu State University of Science and Technology. The study adopted a pretest-posttest quasi-experimental design with non-equivalent control group. The population for the study consisted of 260 Applied Biotechnical Biology and Education Biology third year students of Enugu State University of Science and Technology. A sample of 260 Applied Biotechnical Biology and Education Biology Second year students selected through purposive sampling technique. The instrument used for the study was Genetics Achievement Test (GAT) designed by the researcher. Two research questions and two hypotheses were formulated to guide the study. The hypotheses were tested at 0.05 level of significance. The data collected were analyzed using mean and standard deviation and ANCOVA statistical tools. The results showed that there is significant difference in mean achievement of students in genetics taught using blended learning environment and those taught using traditional method of teaching. There was no significant difference in the mean achievement in genetics of male and female student taught using blended learning environment. Finally it was recommended among others that the state and federal government should procure adequate ICTs in tertiary institution and the students well-trained in the use of such facilities to ensure they acquire computer skills. The University administration should ensure that her students all have computers for blended learning on admission. This will ensure the use of such technologies for blended learning.

Keywords: *Blended Learning Environment, Genetics, Traditional method*

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Introduction

Teaching in the 21st Century of learning becomes a great challenge to educators as technology quickly and strappingly makes its debut in the classroom. Blended learning is going to become more prominent in the classroom, if it has not already. Teachers need to be well educated on what it can offer to the learning experience and how it can enhance student's performance and motivation towards learning. It is important that educators know what motivates and improves student performance and how to implement these motivational techniques/ tools within the learning environment. Blended learning is usually viewed as a combination of face-to-face and online delivery methods, with the aim of each complementing the other. Such an approach should, therefore, influence students' perceptions of the learning environment and, subsequently, their study approach and learning outcomes. In genetics, students learn certain aspects of gene and their mode of transmission from generation to generation. Such knowledge should help students to understand problems of genetic nature rather than relying on superstition and other mystical explanations. Students also learn accurate scientific ways of explaining the genetic defects that may be found in their families and communities. It is thus expected that there is a significant relationship between blended learning, student learning experiences, and ultimate achievement. Knowledge of genetics is critical in understanding other areas of biology. However, it has proved to be a challenging topic to learners, especially in tertiary institution in Nigeria. To address this challenge, this study was conducted to establish whether blended learning environment enhance students' achievement in genetics in Enugu State University of Science and Technology.

Literature Review

Science has been regarded as the bedrock upon which the modern day technological breakthrough is built. Countries all over the world, especially the developing ones like Nigeria, are striving hard to develop technologically and scientifically. Nwagbo in Usman (2010) explained science as an intellectual activity carried out by humans, designed to discover information about the natural world in which we live and to discover the ways in which this information can be organized to benefit human race. According to Feynman (2011), science has become such an indispensable tool that no nation, developed or developing, wishing to progress in socio-economic sphere will afford to relegate the learning of science in schools to the background. The Federal Republic of Nigeria (FRN) in its National Policy on Education (FME, 2013) identified the goals of science education to include:

1. Acquisition of knowledge, skills, inquiry and rational mind for conduct of good life.
2. Produce scientist for national development
3. Service studies in technology and the cause of technological advancement
4. Understanding of the physical world, the forms and conduct of life and
5. Provide knowledge and understanding of the complexity of the physical world, the forms and conduct of life.

Genetics is considered as one of the most important disciplines in biological sciences. It is a fundamental part of biology which deals with, heredity and variation in living organisms. It also intersects frequently with other life sciences. For example, one needs to understand basic genetics in order to appreciate evolution. There are so many areas of genetics which are employed in the study of molecular biology. It is against this background that genetics contains unifying concepts essential for other disciplines in biology (Banet and Ayuso, 2000). In view of this, the knowledge of genetics can be said to play a very important role in the understanding of other areas of biology (Murray-Nseula, 2011). Genetics which is the focus of this study is the branch of biological science that studies the process or mechanism of heredity. It focuses on establishing the scientific basis for understanding of how characteristics or traits are being transferred from parents to their offspring from one generation to another. The scientific understanding of genetics principles had also lead to the application of genetics in industry. For instance, in modern times genetic engineering is used to improve the quality of crops and domestic animals (Tamarin, 2007). Another interesting application of genetics to solve problems is when deoxyribonucleic acid (DNA) is used in crime detection and establishing of paternity where there is dispute. In genetics, students learn certain aspects of gene and their mode of transmission from generation to generation. Such knowledge should help students to understand problems of genetic nature rather than relying on superstition and other mystical explanations. Students also learn accurate scientific ways of explaining the genetic defects that may be found in their families and communities. The teaching of science in general and biology in particular in school enable students to acquire broad knowledge, skills and attitudes that would equip them to solve their personal and societal problems as they develop into adults.

Genetics content, however, poses a challenge to both teachers and students to teach and learn respectively as seen from the school certificate results. Students' underachievement in genetics has been noted in many parts of the world. For example, Dean-Paul and Kola (2008) study in Jamaica revealed that most candidates in the Caribbean Advanced Proficiency Examinations (CAPE) did not perform well in questions set on genetics. Thus, the business of school is to guide youth to develop competencies for problem solving in the environment. The different subjects which they are taught in the school are intended to equip them with different kinds of knowledge, skills and dispositions for problem recognition, identification and solving within the environment. It is therefore important to investigate the effects of blended learning environment on students' achievement in genetics.

There has been much discussion over the term "blended learning" in recent years, yet there continues to be no agreed-upon single definition (Poon, 2013). There is, however, a common theme presented in the literature – the recognition of some combination of virtual and physical environments. This common theme is evident as Graham, Halverson, Spring and Drysdale (2012) described blended learning as the convergence of face-to-face settings, which are characterized by synchronous and human interaction, with Information

and Communication Technology (ICT) based settings, which are asynchronous, text based, and involve humans operating independently. It continues as Mason and Rennie (2006) extend this definition to include other combinations of technologies, locations or pedagogical approaches". It carries on as Garrison and Vaughan (2008) define blended learning as "the thoughtful fusion of face-to-face and online learning experiences" and emphasize the need for reflection on traditional approaches and for redesigning learning and teaching in this new terrain. Contributing Littlejohn and Pegler (2008) observe that blended learning is a useful approach because it changes the focus of learning design by shifting the emphasis from simply considering the face-to-face and online environments to the design of issues, such as considering the process and synergy of blending between online and face-to-face environments.

Blended learning can also be considered good practice. In other words, the use of blended learning as a delivery method can make manifest two of Chickering and Gamson's (1987) seven Principles, which are "encourage students to engage in active learning" and "encourage contact between students and faculty." The use of blended learning can also potentially elicit another good practice principle, which is to give prompt feedback, as blended learning usually involves online interaction, which can facilitate feedback. However, whether prompt feedback occurs depends on how frequently the instructors and students use the relevant online platform. The methodology behind blended learning is to combine classroom learning with mobile learning and online learning. It also has different names like mixed learning, hybrid learning, blended e-learning, melted learning, among other.

According to Santosh (2013) there are six types of blended learning thus: face-to-face driver (teacher led instruction), rotation, flex, online lab, self-blend, online driver. Face-to-face driver is a blended learning model in which teachers deliver most of the curriculum. Teachers lead the class in a lecture following an established protocol taking precedence and technology being a secondary thought. However, they also produce online resources to supplement or revise course material which students can study at home, in the classroom or in a technology lab. In the Rotation model of blended learning: within a given course, a student rotates on a fixed schedule between learning online in a one-to-one, self-paced environment and sitting in a classroom with a traditional face-to-face teacher. Flex model of blended learning features an online platform that delivers most of the curricula. It's the model where most of the learning is done online and the face-to-face model exists to provide on-site support for a flexible and adaptive, as required basis through in-person tutoring sessions and small group sessions. Online lab is a model of blended learning that characterizes programs that rely on an online platform to deliver the entire course but in a brick-and-mortar lab environment. The entire course and teaching are done online. Teachers interact with students through prerecorded videos, audio and video conferences or discussion forums and email. The self-blend model is a fully individualized approach that allows students to choose to take one or more courses online to supplement their traditional school's catalog. Maximum part of the learning is done online, but the student will still attend face-to-face classes.

Online Driver involves online platform as well as teachers to deliver the curricula. Students work from remote locations most of the time and come to school for optional or required face-to-face classes.

The blended learning was achieved in this study by supplementing traditional face to face instruction congruent to the lecture method with a digital learning. On the digital where the students have the option to work from home or from a designated school media center or learning laboratory. Ahmad, Shafie and Janier (2008) investigated the effect of blended learning strategies on teaching concept of integration using thirty engineering students. The study showed increased students' achievement and majority of the students (87.5%) indicated that blended learning helped them to learn topic better. In a study by Archee and Courney (2006) in which blended learning approach was used to teach statistics, findings revealed that the strategy showed improvement in students' performance than the traditional approach. Problem-based learning (PBL) is described as a learning environment where the problem drives the learning. In PBL, the learning begins with a problem to be solved in such a way that students need to gain new knowledge before they can solve it. Students interpret, gather new information, identify possible solution and method, develop problem solving skill, collaborate, discuss and compare ideas to come up with their conclusion. While the search for an enduring, appropriate and effective method of teaching science in general and algebra in particular is on-going, evidence suggests that PBL and Blended learning (BL) are two minds-map, hands-on constructivist learner-centred strategies that have been widely used (Balarabe, 2006; Diaz and Strictland, 2009; Heinze, Procter and Scot, 2007; Ling, Elinda, Kelvin and Lee, 2009; Naidoo and Naidoo, 2007; Schoenfed, 2002) with overwhelming positive results. It is daunting to note that most of the studies on blended learning are outside the shores of Nigeria despite the positive effects of this strategy on students' learning outcomes. A similar study was carried out by Kocoglu, Ozek and Kesli (2011) compared a teacher training programme designed for in service English teachers with a face-to-face programme in English Language teaching. Results indicated that there was no difference in content knowledge acquisition between teachers receiving blended instruction and teachers receiving face-to-face instruction. Al-Masry (2012) investigated the effectiveness of using the electronic blended learning in teaching a unit in English course at the cognitive levels (recognition, comprehension, and application) by second year secondary female students in Makkah. The results concluded there were significant differences between the average test scores of the group of students using the electronic blended learning, and the control group of students using the traditional method in post-application of the achievement test at the recognition, comprehension and application in favor of the experimental group. The implication of this is that little or nothing is known about the application of these strategy in teaching genetics in Nigeria (Azu and Osinubi, 2011; Fatade, Arigbabu, Mogari and Awofala 2014). The purpose of this study therefore, was to investigate the effects of blended learning environment on students' achievement in genetics using gender as a moderator variable.

Gender is one of the factors that might affect students' achievement in

genetic problem solving. Gender is defined by Bassow (1991) as cited in Ishaku (2015). as a psychological term describing behaviour and attributes expected of individuals on the basis of being born either a male or a female. Keller (1991) as cited in Ishaku (2015) writing on the embrassive nature of gender observed that, it is a cultural construct developed by society to distinguish the roles, behaviour, mental and emotional characteristics between male and female. Dike and Abimbola (2010) asserted that gender is obvious from birth and children are socialized very early into appropriate sex-typed-occupations. Hence gender differential valuation of male and female has been viewed as an integral part of the socialization process and the development of the adult male and female personalities. Allele (1993) as cited in Ishaku (2015) pursuit that gender stereotypes hamper the development of the personality and leads to social inequality, due to gender stereotyping, the efforts of the girls to achieve excellence in the subjects perceived as male subjects are reduced. They can excuse their low performance in science subjects on the grounds that such subjects are not meant for girls. The boys who see subjects such as mathematics and chemistry as male subjects will make every efforts and work hard to achieve excellence in those areas so that they will not be regarded as weaklings.

Writing on the influence of gender on sciences and technology education, Changeiywo (2002) affirmed that science and technology is a social cultural product, the researcher reiterated that the socialization of both male and female in the society can have profound effects on their perception and participation in science oriented courses. It could also be that socialization of boys and girls could affect their acquisition of problem-solving skills in science and genetics in particular. Some science educators have been worried about the achievement of female students in science courses. The differences have been considered to pose problems in science and technology. There has been research into the nature and origin of gender differences in ability and achievement in science. Bayerbach and Smith (2002) examined how students used a computerization concept mapping in problem-solving in genetics in high school in Kansas USA. The findings of the study revealed that there was a significant difference between male and female students in favour of the male students. Al-Haq and Al-Sobh (2010) examined the effectiveness of a web-based writing instructional EFL programe (Web WIP) on Jordanian secondary students' performance. The results also revealed that there were statistically significant differences due to gender in favour of the female students compared with males. Smith (2004) investigated gender as a factor in problem-solving in the use of grid map to study plant distribution in an abandoned school garden. The result of the analysis indicated no significant difference in achievement of male and female students. Thus, there is the need to accord boys and girls exactly the same opportunities and challenges in the classrooms.

Statement of the Problem

The yearning for quality and effective instruction delivery has been a long standing objective of science education. The emerging concern for the poor achievement of students in tertiary institution and its resultant consequence on the production and development of future scientist, engineers and technologies had led to the search for instructional strategies that promote effective and improved science learning. Consequently, science instruction has become a focus of research for two or more decades. Science knowledge is vast; its scope in each discipline is on the increase. Science educators have come to realize that trying to teach science as a list of facts to be memorized rather than understood is a futile exercise.

It was observed that there is a dearth of empirical focusing on instructional strategies that can enhance teaching and learning of concepts in science. Academic achievement of students in Genetics II (BIO 301) has been persistently low indicates that students are not favourably disposed towards the concepts of genetics. Poor understanding of genetics concepts and poor performance on questions related to genetics as candidate's weakness, invariably leading to their poor achievement in the course. The need to redress this alarming academic problem necessitated exploring the effect of blended learning environment on students' achievement in genetics in Enugu State University of Science and Technology.

Aim and Objectives of the Study

The aim of this study was to investigate effects of blended learning environment on students' achievement in genetics in Enugu State University of Science and Technology, Enugu State. Specifically, this research intends to:

1. Determine the difference in mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method of teaching
2. Ascertain the difference in the mean achievement scores of male and female students in genetics taught using blended learning environment.

Research Questions

The following research questions were stated to guide the study:

1. What is the difference in mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method of teaching?
2. What is the difference in the mean achievement scores of male and female students in genetics taught using blended learning environment?

Null Hypotheses

The following hypotheses were formulated to guide this study and tested at 0.05 level of significance.

1. There is no significant difference in mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method teaching.
2. There is no significant difference in the mean achievement scores of male and female students in genetics taught using blended learning environment.

Research Method

This study adopted quasi-experimental research design. Specifically, it is a pretest

– post-test non-equivalent control group design. The study was carried out in Enugu State. A sample of 260 Applied Biotechnical Biology and Education Biology third year students selected through purposive sampling technique. The instrument for data collection was Genetics Achievement Test (GAT). Genetics Achievement Test (GAT) is a multiple choice test items developed by the researcher.

The pre-test was implemented at the beginning of the second semester of the academic year of 2019/2020 to both the experimental group and the control group. Teacher-reach model of blended instruction was used where one lecturer taught two sections of the same course: Genetics II (BIO 301). Instruction in section A was delivered in a traditional method in which students have face-to-face time with the instructor every day for 12 weeks of the semester. Instruction in section B was delivered in a blended method, in which students have face-to-face time with the instructor on an A/B schedule with 6 weeks face-to-face days and 6 weeks digital learning days. On the digital days, the students have the option to work from home or from a designated school media center or learning lab. No instruction is provided in either of these settings.

After the treatment has ended, posttest was administered to both groups. Mean () and standard deviation (SD) were used in answering the research questions while analysis of covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. The pretest scores were used as covariates to the posttest scores. The ANCOVA was employed to partial out the initial differences between the experimental and control groups as well as to compare the growth means of the traditional section to the blended section measured before and after the course, respectively.

Data Presentation

Research Questions One

What is the difference in mean achievement scores of students in genetics taught using blended

learning environment and those taught using traditional method of teaching in Enugu State

University of Science and Technology?

Table 1
Pretest- Posttest and mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method of teaching

Group	n	Pre-test		Post-test		Mean Difference
		$\bar{x}$	SD	$\bar{x}$	SD	
Blended learning environment (Experimental group)	130	20.34	3.78	42.66	11.45	23.32
Traditional method (Control group)	130	21.16	4.93	22.60	4.29	1.44

Table 1 shows the mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method of teaching. The result shows that the pretest mean of students using blended learning environment (experimental group) was 20.34 with a standard deviation of 3.78 and a posttest mean of 42.66 with a standard deviation of 11.45. The difference between the pretest and posttest mean for student taught using blended learning environment was 23.32. On the other hand, the pretest mean achievement scores of students in genetics taught using traditional method of teaching (control group) was 21.16 with a standard deviation of 4.93 and a posttest mean of 22.60 with a standard deviation of 4.29. The difference between the pretest and posttest mean for students in control group was 1.44. From this result, it can be deduced that students taught using blended learning environment (experimental group) performed better than students traditional method of teaching (control group).

Research Questions Two

What is the difference in the mean achievement scores of male and female students in genetics taught using blended learning environment?

Table 2

Pretest- Posttest and mean difference in the mean achievement scores of male and female students in genetics taught using blended learning environment

Gender	n	Pre-test		Post-test		Mean Difference
		x	SD	x	SD	
Female	79	20.19	3.76	42.44	11.69	22.2
Male	51	20.55	3.83	42.98	11.21	22.43

Result in Table 2 shows the mean difference in the mean achievement scores of male and female students in genetics taught using blended learning environment. The result showed that male students had a pretest mean of 20.19 with a standard deviation of 3.76 and a posttest mean of 42.44 with a standard deviation of 11.69. The difference between the pretest and posttest means for male students was 22.25. Whereas, female students had a pretest mean of 20.55 with a standard deviation of 3.83 and a posttest mean of 42.98 with a standard deviation of 11.21. The difference between the pretest and posttest means for female students was 22.43. For both male and female taught using blended learning environment, the posttest means were greater than the pretest means with male students having a slight higher mean difference than their female counterparts.

Hypotheses Testing

Hypotheses One

There is no significant difference in mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method of teaching.

Table 3

Analysis of Covariance (ANCOVA) of the difference in mean achievement scores of of students in genetics taught using blended learning environment and those taught using traditional method of teaching

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	30347.183a	2	15173.591	257.415	.000
Intercept	2075.391	1	2075.391	35.208	.000
Pretest	4166.871	1	4166.871	70.690	.000
Method	27918.129	1	27918.129	473.623	.000
Error	15149.105	257	58.946		
Total	322401.000	260			
Corrected Total	45496.288	259			

a. R Squared = .667 (Adjusted R Squared = .664)

The result in Table 3 shows that an F-ratio of 473.623 with an associated probability value of 0.000 was obtained with regards to difference in mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method of teaching. Since the associated probability of 0.000 was less than 0.05, the null hypothesis which states that there is no significant difference in mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method of teaching was rejected. This implies that there is a significant difference in mean achievement scores of students in genetics taught using blended learning environment and those taught using traditional method of teaching.

Hypotheses Two

There is no significant difference in the mean achievement scores of male and female biology students taught using blended learning environment.

Table 4

Analysis of Covariance (ANCOVA) of the difference in the mean achievement scores of male and female biology students taught using blended learning environment

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6331.846a	2	3165.923	37.928	.000
Intercept	107.204	1	107.204	1.284	.259
Pretest	6322.840	1	6322.840	75.748	.000
Gender	.523	1	.523	.006	.937
Error	10600.931	127	83.472		
Total	253619.000	130			
Corrected Total	16932.777	129			

a. R Squared = .374 (Adjusted R Squared = .364)

The result in Table 4 shows that an F-ratio of 0.006 with an associated probability value of 0.937 was obtained with regards to the difference in the mean achievement scores of male and female biology students taught using blended learning environment. Since the associated probability of 0.931 was greater than 0.05, the null hypothesis which states that there is no significant difference in the mean achievement scores of male and female biology students taught using blended learning environment was accepted. This implies that there is no significant difference in the mean achievement scores of male and female biology students taught using blended learning environment.

Discussion of Findings

Result in Table 1 shows the existence of a virtual difference between the means of the experimental and control groups in the Genetics Achievement posttest. To check for significance of the differences, depending on the teaching methods, a one-way ANCOVA was conducted for the posttest to neutralize the effect of the pretest, according to the study variable, teaching method (Table 3). As shown in Table 3, the statistically significant effect ($\alpha = 0.05$) on the Genetics Achievement posttest was attributable to teaching methods, in which the students in the experimental group who were taught using Blended Learning Environment and the traditional method, performed better than their counterpart in the control group who were taught using the traditional method only. The results demonstrated that the high performance of the experimental group could be attributed to the advantages of the computer in providing information. The advantages of the computerized programme may have contributed to the better performance of the students in the experimental group who were taught using a computerized material designed to be attractive, interesting, and enjoyable for students and contains sight and sound features that far outweigh the rigid drawings in the book, thus making learning more fun. In the learner-computer interaction, the programme allowed the solution to be found via the computer, which also conducted the correction process, so that the students would know whether the solution they had provided was correct or incorrect. If the answer was correct, the computer provided feedback and encouragement; otherwise, the students were asked to try again. This can also be attributed to the novelty in style of introducing Genetics lessons via a computer. The results of this study are consistent with those of Ahmad, Shafie and Janier (2008) who found that blended learning increased students' achievement and majority of the students (87.5%) indicated that blended learning helped them to learn topic better. The finding of this study also agrees with Al-Masry (2012) who found significant differences between the average test scores of the group of students using the electronic blended learning, and the control group of students using the traditional method in post-application of the achievement test at the recognition, comprehension and application in favor of the experimental group. In the other hand the finding in not in line with Kocoglu, Ozek and Kesli (2011) who found that there was no difference in content knowledge acquisition between teachers receiving blended instruction and teachers receiving face-to-face instruction.

The result in Table 4 indicated a no significant difference in the mean achievement in genetics of male and female student taught using blended

learning environment. This finding contradict with earlier finding of Bayerbach and Smith (2002) who found that there was a significant difference between male and female students in favour of the male students. Al-Haq and Al-Sobh (2010) found that there were statistically significant differences due to gender in favour of the female students compared with males. However, this finding is in line with Smith (2004) who found a no significant difference in achievement of male and female students. Thus, there is the need to accord boys and girls exactly the same opportunities and challenges in the blended learning environment.

Conclusion

An analysis of the overall results of the study indicated that generally Blended Learning represents an effective method in teaching Genetics, and it reflects positively on the student's achievement in the specific subject. The importance of blended learning environment comes from the student feeling towards this method, they feel that they play a major role during learning and because they have the option to choose which method of learning suitable to them. Finally, using blended learning environment as a teaching method, reflect on raising student achievement and improving their attitudes towards learning. Moreover, it develops student's skills, including: communication skills, receiving information, and the interaction between the student and the teacher. Blended learning environment saves the time for both the teacher and the student.

Recommendations

Based on the findings of the study, the researcher recommends the following:

1. The state and federal government should procure adequate ICTs in tertiary institution and the students well-trained in the use of such facilities to ensure they acquire computer skills.
2. The University administration should ensure that her students all have computers for blended learning on admission. This will ensure the use of such technologies for blended learning.
3. The federal government should ensure good internet connectivity in Nigeria to boost blended learning and the use of ICTs in schools.
4. Versatile knowledge of use of ICT should be a vital criterion for employment of University's lecturers. This will enhance blended learning among their students.

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INFUSION OF SECURITY CHALLENGE EDUCATION IN UNIVERSAL BASIC EDUCATION CURRICULUM (UBE): AN ESSENTIAL TO CURB INSURGENCY

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Abstract

Security challenge in Nigeria today is the most discussed because many including students live in fear of being harassed, maimed, kidnapped, killed or abducted. It will be absurd to narrow down the issue of security to defense and military might alone. The blurred lens of national security has made successive Nigeria government to keep repeating the mistake of allocating a high percentage of the national yearly budget to defence. It is unfortunate that this huge expense on military and defence has been put to nothing by the spate of insurgency that remains unabated in the country. Security of a nation is the ability of a nation to overcome any form of her security challenges no matter the magnitude and dimension of the challenge. Security challenge in Nigeria today is beyond the scope of military power, legislation or law enforcement alone. The success of insurgency attack and incessant abduction of our secondary school students may partly be attributed to the naivety and lack of basic skills acquisition of self defence and tactics to escape in times of emergency. The study therefore anchors on the aforementioned challenges for infusion of security challenge education in the revised curriculum of universal basic education programme.

Keywords: *Infusion, Security challenge, Insurgency and Universal Basic Education (UBE).*

Introduction

The National Policy on Education stipulates a 9-3-4 structure in Nigeria which include nine years lower basic education, three years upper basic and four years of university education. The primary and junior secondary classes constitute basic education that is free and compulsory which is the scope of this study. Nevertheless, the school curriculum is a dynamic and open document that is constantly changing with the needs, challenges and aspirations of the society. The curriculum revision process

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involved identification and grouping of related disciplines such as Christian Religious Studies/ Islamic Studies, Social Studies, Civic Education to create a new composite or cluster of Revised BEC subject called Religion and National Values. Key concepts in the former curricula now form integrating threads for organizing the contents of the new subject into a coherent whole. There is need to infuse and implement security challenge education immediately to curb the menace of insurgency. Best and Von-Kemedi (2012) opined that many of our secondary schools are located in communities, and are not immune from insurgent attack. According to them, violent activities in those communities do not allow the school system to run smoothly. Insurgency has led to the closing down of schools in many parts of Nigeria. The North, South-South and South-East of Nigeria have witnessed rampant cases of abduction and kidnapping of school students and personnel in the last few years. Another emerging source of violence and insecurity in our communities and schools is the recent cases of invasion by the Fulani headsmen.

The Need for Infusion of Security Challenge Education

Glaring evidences exist around us in the country today of the effects of long years of negative school learning disruption which are revealed in the unpredictable attack of bandits, Fulani herdsmen, cattle rustlers and the likes. The country is already experiencing a high population density as the population is more than 200 million, yielding an average density of more than 200 persons per square kilometer (Omofonmwan & Osa-Edoh, 2008). This immense population requires that the level of literacy should increase. This can actually be achieved in different classrooms in our schools. Contrary to this expectation, the activities of insurgency have almost completely nullified literacy programmes in schools.

In the light of this, about 200 hundred secondary school students have been kidnapped in co-ordinated attacks by terrorist and bandits in the few past months alone. In 2014, 276 girls were abducted from government secondary school, Chibok, Borno State. February 29, 2016 came with a thunder bolt of shock when 3 students of Babington Macaulay Junior seminary were abducted. Eight months later, precisely on October 6, 2016, armed bandits invaded Igbonia Model College in Epe, Lagos abducting the schools' vice principal, a teacher and 4 pupils. On December 11, 2020, 344 male students were abducted from their hostels in Government Science School, Kankara, Katsina State. Two months later, on December 20, 2020, 80 pupils of the Islamiyya school, Mahuta, Kaduna State were abducted.

Also, January 17, 2021, 27 students from GSS college, Kangara, Niger State were abducted. Girl students of Government Secondary School Jangebe, Zamfara state were not spared in the insurgent attack as 279 students were whisked away on February 26, 2021. Another kidnap attack descended on the Federal College of Forestry Mechanisation, Afaka, Kaduna State at midnight on March 11, 2021. While Nigerians were still mourning the incessant attack and the shaking of the educational sector within a short time, Miss Dorathy Yohanna, Master Benjamin Habilla, Miss Precious Nwakacha and Master Sadiq Muazu all students of Greenfield university

in Kaduna State were killed in cold blood when 23 of their students were abducted.

However, various strategies had been proposed and implemented by the Nigerian government to curb these security challenges and some of the strategies include abatement measure, security legislation, security policies, different operations by the army and recently the delivery of the first batch of six A-29 Super Tucano aircraft from the United States of America to the Nigerian Air force (Kingsley, 2021). Although these efforts have not yielded the expectations of the people in curbing some of these security problems, new problems are emanating due to the fact that the basis of these problems have not been resolved.

According to Thathong (2012), most of these strategies focus on "end of the pipe line" control and treatment rather than prevention and thus have been unable to produce desirable result thus far. In this regard, these security crises require more focus on prevention and resolving the issues from the roots. Thus in resolving security problems, special attention must be placed on increasing the knowledge of the populace and thereby creating a positive attitude and a change in behaviour toward the security matters. Hence, Security Challenge Education has a significant role to play in creating such knowledge and positive attitude and a change in behaviour about security among the students in UBE and other individuals at large in the society.

It can therefore be deduced that the magnitude of insecurity ravaging our students in recent times with deaths, torture, maiming and the psychological trauma there are subjected to is a call to the infusion of security challenge education in our UBE curriculum. This will serve as 'catch them young' approach. The main goal to be achieved from this curriculum is creating the awareness in the young learners in the society by improving the security literacy rate of her citizens. This is done by motivating and informing learners on how to apply security skills, commitments, positive attitude and adequate knowledge to identify, and escape in the midst of attack.

Ezeoba (2012) asserted the significance of peace education as a panacea for achieving enduring security of lives and properties in our schools. He contended that, if peace education and peace culture is properly taught and practised by teachers in our schools, it becomes very easy for students to imbibe. Regularly reawakening the consciousness of students on security alertness can go a long way in curbing ignorance among students. Kester (2010) pointed out that the school can enhance the level of its security by organizing seminars and workshops regularly to educate staff and students on safety and security tips, peace culture and effective school community relations. He also asserted that an effective school counselling services can help to identify early and counsel students with problems of indiscipline and other anti social behaviours.

Ekpo (2015) indicated that the state of infrastructure in our public schools also contribute to the cases of violence and insecurity in schools. According to him, most public secondary and primary schools in Nigeria have no perimeter fencing, iron gates and other security measures that may help in the protection of lives and properties in the school environment. Most of these schools also have no security personnel attached and in most cases the school compound are thoroughfare for community

members and intruders both day and night. Best and Von-Kemedy (2012) also opined that secondary and primary school students are most vulnerable during violent attacks due to lack of security personnel in schools. And to worsen the situation, even when distress calls are made by school staff during such attacks, the response from government security agents are not usually quick as was the case of many bandits' attacks on our schools. Audu (2016) was of the view that schools in violence-prone communities should be attached with armed security agents in order to ensure that the lives of vulnerable staff and students are protected at all times. And if that is not possible, the schools should be shot down. However, it is rather unfortunate that even the presence of security operatives, like the case of Federal College of Mechanisation, which is surrounded by military formations in Kaduna, the bandits still operated without fear.

Earthman (2002) opined that there should be installation of appropriate security gargets in the school environment such as guide signage at the gate, CCTV cameras, alarm bells etc. And there should be internal security personnel and armed security agents to parade the schools especially in violence-prone communities. Also, to improve school security management, improvised exit should be prepared and monitored in case of emergency. . The challenge of violent extremism in our school demand urgent attention of government and state holders in our educational system According to Ike (2015) school security management is the process of creating conducive environment for teaching and learning free from intimidation and fear of violence, coming from within or outside the school. This may be achieved through the use of appropriate technologies/ infrastructures and personnel capable of mitigating any formidable security threats in the school.

Pitfalls to Infusing Security Challenge Education Into UBE Curriculum

There are several factors that may oppose the infusion of security challenge education into the UBE curriculum. One of such factors is the need for trained and qualified teachers. According to Bubb (2010), a teacher is a person that has knowledge, skills, trainings in teaching, explaining and educating. The teacher is the climax through which behavioral changes are facilitated in the cognitive, psychomotor and affective domain. It is only a trained teacher that can effect change in these three areas and make the curriculum effective.

This effectiveness can be achieved through teaching by a teacher who indeed has gone through the teacher training process and is qualified to impart knowledge that brings about change in behaviour, mould and reform characters, inculcate discipline and the right value as well as equip an individual with standard security tips based on the training. A teacher is also the one who aims at bringing about a desirable outcome not only in the life of an individual but the society at large. The teacher has the ability to: influence what is taught, assess learning and more importantly, organize some areas of pedagogy to influence learning (Maguire, Dillon & Mahony, 2011). Learning cannot be done in abstraction. On this note, instructional materials on security challenges become a problem. Relevant instructional materials should be made available. There is scarcity of relevant materials on security challenges and its prevention ranging from textual to non textual materials.

Another important factor that must be considered or it will pose as a pitfall is the introduction of Security Challenge Education into the Nigerian education system, based on the philosophy of education contained in the National Policy on Education (2013), the nine year basic education curriculum has to be reviewed to infuse Security Challenge Education into several subjects. It is believed that the infusion of this into different U.B.E. subjects will help learners develop knowledge, skills security challenges and management from a very early stage.

Framework for Infusion of Security Challenge Into UBE Curriculum

An appraisal for the current UBE curriculum framework for Nigeria schools indicates lack of provision for security challenge education and mitigation idea. This presupposes a neglect of the burning issue that has to do with educational sustainability (Monkwe 2010). Security challenge education curriculum infusion in all context of this paper contemplates a holistic infusion of pragmatic approaches to the understanding of security challenges and corresponding approaches to its mitigation. Curriculum is the instrument with which the school transmits knowledge, values attitudes and skills to the learners to make them useful members of the society (Esu, 2012). The machine needed to translate the curriculum remains the teacher. The teacher needs to employ strategies, techniques and methods that will affect the cognitive, affective and psychomotor of the learner to envision learning without security challenges. On this basis, this paper examines and develops the aspects of UBE curriculum where security challenge education can be infused.

The U.B.E. curriculum as drafted by Nigerian Educational Research and Development Council (NERDC) is presented in Table 1, 2, and 3.

Table 1
The U.B.E curriculum. Basic education (Primary 1-3)
Minimum of 6 subjects, maximum of 7 subjects

Subjects		Explanatory notes
English studies	i.	Official National Language
	ii.	Medium of Instruction in schools
	iii.	The subject predisposes itself for the infusion of the following: Road Safety Education, Disaster Risk reduction Education, and Consumer Education
	iv.	Subject include literature-in-English
Mathematics	i.	Fundamental discipline for science and technological development
	ii.	Important for everyday life
Nigerian language	i.	National Policy on Education (NPE) stipulates that the medium of instruction should be the language of the immediate environment of the child.
	ii.	Schools are free to select such Nigerian Language to be taught

Basic Science and Technology (BST)	i.	Each of the listed components will serve as themes for the Basic Science and Technology curriculum
	ii.	Climate change is part of Basic Science theme
	iii.	Disaster Risk Reduction Education and Consumer Education are infused into Basic Science and Technology Curriculum
	iv.	Create enabling environment for the subject in all schools by making computers available in schools
Religion and National Values (RNV)	i.	Listed components will serve as themes in the Religion and National Values Curriculum
	ii.	Contents are planned for all children to take Social Studies, Civic Education and Security Education themes
	iii.	Separate classes should be run for Christian Religious Studies (CRS) theme and Islamic Studies (IS) theme
	iv.	Consumer Education, Disaster Risk Reduction Education and Peace and Conflict Resolution curricula are infused into the Civic Education, Social Studies and Security Education Themes
	v.	Create enabling environment for the subject in all schools
Cultural and Creative Arts (CCA)	i.	Important for preservation of our Cultural Heritage and fostering Creativity
Arabic Language	i.	Optional

Source: Nigerian Educational Research and Development Council (NERDC, 2017) www.nerdc.org.ng/e-curriculum.

Table 2
The U.B.E. curriculum. Basic education (Primary 4-6) Minimum of 7 subjects, maximum of 8 subjects

Subjects		Explanatory notes
English studies	i.	Official National Language
	ii.	Medium of Instruction in schools
	iii.	The subject predisposes itself for the infusion of the following: Road Safety Education, Disaster Risk Education, and Consumer Education
	iv.	Subject include literature-in-English

Mathematics	i.	Fundamental discipline for science and technological development
	ii.	Important for everyday life
Nigerian language	i.	Schools are free to select such Nigerian Language to be taught
Basic Science and Technology (BST)	i.	Each of the listed components will serve as themes for the Basic Science and Technology curriculum
	ii.	Climate change is part of Basic Science theme
	iii.	Disaster Risk Reduction Education and Consumer Education are infused into Basic Science and Technology Curriculum
	iv.	Create enabling environment for the subject in all schools by making computers available in schools
Religion and National Values (RNV)	i.	Listed components will serve as themes in the Religion and National Values Curriculum
	ii.	Contents are planned for all children to take Social Studies, Civic Education and Security Education themes
	iii.	Separate classes should be run for Christian Religious Studies (CRS) theme and Islamic Studies (IS) theme
	iv.	Consumer Education, Disaster Risk Reduction Education and Peace and Conflict Resolution curricula are infused into the Civic Education, Social Studies and Security Education Themes
	v.	Create enabling environment for the subject in all schools
Cultural and Creative Arts (CCA)	i.	Important for preservation of our Cultural Heritage and fostering Creativity
Arabic Language	i.	Optional
Pre-Vocational Studies	i.	Each of the listed component will serve as themes for the Pre-Vocational Studies
	ii.	Consumer education is infused into Pre-Vocational Studies
	iii.	Create enabling environment for the teaching of pre-vocational studies in schools

Source: Nigerian Educational Research and Development Council (NERDC, 2017) www.nerdc.org.ng/e-curriculum.

Table 3
The U.B.E. curriculum. Basic education (JSS 1-3)
Minimum of 9 subjects, maximum of 10 subjects

Subjects		Explanatory notes
Mathematics	i.	Fundamental discipline for science and technological development
	ii.	Important for everyday life
Nigerian language	i.	Schools are free to select such Nigerian Language to be taught
Basic Science and Technology (BST)	i.	Each of the listed components will serve as themes for the Basic Science and Technology curriculum
	ii.	Climate change is part of Basic Science theme
	iii.	Disaster Risk Reduction Education and Consumer Education are infused into Basic Science and Technology Curriculum
	iv.	Create enabling environment for the subject in all schools by making computers available in schools
Religion and National Values (RNV)	i.	Listed components will serve as themes in the Religion and National Values Curriculum
	ii.	Contents are planned for all children to take Social Studies, Civic Education and Security Education themes
	iii.	Separate classes should be run for Christian Religious Studies (CRS) theme and Islamic Studies (IS) theme
	iv.	Consumer Education, Disaster Risk Reduction Education and Peace and Conflict Resolution curricula are infused into the Civic Education, Social Studies and Security Education Themes
	v.	Create enabling environment for the subject in all schools
Cultural and Creative Arts (CCA)	i.	Important for preservation of our Cultural Heritage and fostering Creativity
Arabic Language	i.	Optional
Pre-Vocational Studies	i.	Each of the listed component will serve as themes for the Pre-Vocational Studies
	ii.	Consumer education is infused into Pre-Vocational Studies
	iii.	Create enabling environment for the teaching of pre-vocational studies in schools

Business Studies (Junior)	i.	It is desirable for every child to have some idea of Business enterprise
	ii.	Entrepreneurship is treated in Business Studies
	iii.	Consumer Education is infused into Business Studies Curriculum
French Language	i.	Nigeria's second Official Language
	ii.	Nigeria is surrounded by Francophone countries
	iii.	The study of French Language will make our children more competitive at the global level.

Source: Nigerian Educational Research and Development Council (NERDC, 2017) www.nerdc.org.ng/e-curriculum

Infusing Security challenge Education into Aspects of UBE Subjects

The objectives of the security challenge education should be highlighted and the approach should be allowed for objectives within specified themes to be infused into existing school subject at the primary and secondary schools. Infusion of security challenge education concept into the existing UBE curriculum will mean that relevant topics and issues within each theme are structured into performance objectives, content, learner's activities, teaching materials and evaluation guidelines and is carefully incorporated into different basic school subjects for appropriate implementations. These proposals are:

i. Security challenge education through English studies which predisposes itself to the infusion of the theme "Disaster Risk Reduction (DRR)"

ii/ Security challenge education through Basic science and Technology (BST) which should carry the infusion of the theme "Information Security Risk Reduction, Security Education and the Use of Smart Phones in Learning Environment"

iii. Security challenge education through Religion and National values (RNV) which should have a theme "Security Consciousness and Learning Habit".

iv. Security education through Pre-vocational Studies which should promote the basic idea on the use of arms in case of emergency.

From this analysis, there is need to introduce Security challenge Education into the Nigerian schools system.

Conclusion

This paper has explored how issues of security and its challenges can be infused into the UBE curriculum. It is a known fact that education promotes economic transformation. Base on the the study, it is no doubt that the present state of insecurity in Nigeria and poor state of security consciousness among our students have led many of them into stigmatization and psychological trauma even after their release from the camp of the bandits. Therefore, the UBE curriculum should be revised to include security challenge education for the betterment of the educational sector. It is imperative that something should be done fast to save the educational system and the social life of future generation.

Recommendations

To achieve the general aim of infusion of security challenge education into the UBE curriculum, this paper recommended that:

1. Nigeria Educational and Research Development Council (NERDC) under the guidance of United Nations Development Programme should develop themes on security challenge education for the UBE curriculum.
2. The themes on security education need specialized teachers. Therefore, there is urgent need to train and retrain more teachers on security matters for effective delivery of their topic contents.
3. Textbooks on security education need to be developed; existing ones, if any, should to be reviewed in line with the new arrangement in the curriculum structure.
4. Schools are encouraged to adopt modern security measures such as effective security/safety seminars and workshops. Modern security gadgets like unmanned drones should be provided to hover around schools that are susceptible to banditry attack.
5. CCTV gadgets should be installed in schools prone to attacks by banditry. In addition to hiring internal school security personnel, armed government security agents should be stationed in their numbers in all schools prone to terrorism in order to adequately handle security challenges.

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ANALYSING THE STUDENT TENDENCIES OF PREFERRING THEIR NATIVE LANGUAGE IN LEARNING

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Abstract

The survey is to identify high school students interest level to learn in Native language. Most of students are font to English language and believes that by learning English will promote their studies to higher level. The parents, social acceptance, status issues are the other factors which increase availability of English medium schools. Above average students in this survey believes that Malayalam is neglected in curriculum and most of students haven't got real exposure to Malayalam. This survey gives the present condition of Malayalam in academics. We need to balance both languages otherwise our MT will become a dead language. So as soon as possible we need to make aware the mass as well as the students need of MT in curriculum and need to consider this as a serious issue because it's about us.

Introduction

"If you talk to a man in a language he understands, that goes to his head. If you talk to him in his language, that goes to his heart." – Nelson Mandela

Language is a tool for intellectual and emotional expression. It is a vehicle of inter-generational transmission of culture, scientific knowledge and a worldview. It is the vital, unseen thread that links the past with the present. It evolves with human evolution and is nourished by constant use. In short, our languages permeate every facet of our day-to-day life and form the very basis of our civilization. In fact, they are the lifeblood of our identity, both individual and collective. They play a significant role in creating and strengthening bonds among people. More than 19,500 languages and dialects are spoken in India as mother tongues, according to the Language Census. There are 121 languages which are spoken by 10,000 or more people in the country. Languages are never static. They evolve and adapt to the socio-economic milieu. They grow, shrink, transform, merge and, sadly, die. The great Indian poet, Acharya

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Dandi, had said that if the light of language does not exist, we will be groping in a dark world. It is extremely disheartening that 196 languages in India are classified as endangered. We may have to ensure that this number doesn't increase. We have to protect and preserve our languages and the best and only way is to constantly use them. The 2011 Census listed ٢٧٠ mother tongues; of these, as per a ٢٠١٧ study, 47 languages were used as mediums of instruction in Indian classrooms. But teaching in the mother tongue is not a silver bullet to solve the problem of low learning outcomes, cautioned Suman Bhattacharjea, the director of ASER Centre. "If the teacher is still focused on completing the syllabus, on some level, regardless of what the language is, the content being transacted is still not at the level that the child can understand," she explained.

Mother tongue (MT) is what we learn from birth and each word is learnt with all its background, history, and linkages without us noticing it. A lot of meaning is also imbibed from our social environment, naturally and effortlessly. This cannot happen in a foreign language without making a determined effort to gain expertise with all its idioms, figures of speech, colloquialisms and relevant history. We think in our mother tongue and have a natural command over it and an ease of expression that gives us confidence to think and express.

Background of the Study

After Independence, the use of mother languages has been reiterated in several policy documents and commission reports starting from the University Education Commission (1948-49), Secondary Education Commission (1952-53) and Official Language Commission (1956); the principles of the three-language formula were first discussed in the Central Advisory Board of Education (CABE) meeting, 1957, and this evolved as a consensus in 1961 at a meeting of the chief ministers of different states. The Kothari Commission (1964-66) stated: "Medium of education in school and higher education should generally be the same... The regional languages are adopted as the media of education in higher education... Three-language formula should be implemented." This was reinforced in the National Policy of Education (NPE) in 1968 and the NPE 1986, Program of Action of 1992 and Draft New Education Policy 2019.

Though the use of mother languages as mediums of instruction in school and higher education has been armoured from pre-Independence times, sadly, the number of those desiring to study in English has been multiplying exponentially. This has led to the burgeoning of monolingual educational institutes governed by the English language and is creating a society that is far from sensitive, just and equitable. As per U-DISE (Unified District Information System for Education) data, in the year 2013-14, out of the total enrolled students in school, 15% of the students had English as the medium of instruction. This had substantially increased to 21% in 2017-18. Among the mother languages, Hindi as a mother language witnessed a decline from 47% to 45% across all grades; in the urban areas, 42% of students studied in English medium schools compared to 13% in rural areas in 2017-18. Further, the transition from the mother language to English has happened across grades (elementary, primary, secondary, higher secondary), with a maximum 7% increase in the use of English as medium of instruction in primary

classes and a proportionate decline from 86% to 79% in the use of mother languages as mediums of instruction. Hindi as a medium of instruction observed a decline of 4% (51% to 47%) in primary classes. The nature of dominance of English over all other mother languages is allied to power, status and identity of students. Students speaking different mother languages come together to study in an educational institute where they interact with each other without any difficulties at both school and higher education level. Yet they are being taught monolingually through a foreign language that not all students are able to associate with. The whole process has led to the ignorance of mother languages and a feeling of disassociation among students, and bears a strong resemblance to what Macaulay did in 1835.

To preserve mother languages and help students associate more with what they study, we need to develop pragmatic strategies to make a transition from English to the mother language as medium of instruction. Though we may face daunting problems at the start, such a step is necessary. The change needs to be started from higher education institutes; one can then arrive at and adopt solutions at lower levels.

There is a misconception that only English education offers opportunities to grow in the modern world. Knowing English is useful, like knowing other international languages. This can't be extended to make a case for supplanting the mother tongue with English, as some are advocating. It can be learnt easily at an appropriate stage, after a strong foundation is laid in the mother tongue. The situation can lead to the devaluation of a mother tongue and to its ultimate disappearance in the long term. Education system have a prior role in this scenario. When children are schooled through a second language (in this case, English), this results in either a loss of, or a lack of continued development in the child's primary language, or MT. When entire communities move to the second language, the first language eventually dies out, especially if it has few speakers. When languages die out because there are no speakers left, it is not just the words that go, but also the ideas, the thoughts, the knowledge systems that were represented in that language. Mother tongues do not necessarily have national-language status, official-language status, or status as the language of instruction so it slowly disappear.

The National Education Policy (NEP) approved by the Union Cabinet says that wherever possible the medium of instruction in schools until Grade V preferably until Grade VIII should be the mother tongue or the local or regional language. "All efforts will be made early on to ensure that any gaps that exist between the language spoken by the child and the medium of teaching are bridged," the NEP says.

Mother Tongue Issue – An Overview

Education plays a vital role in helping children connect to their socio-cultural roots. Neither science nor humanities can engage a young mind if not taught in the mother tongue, academicians argue. Kerala's primary education has in fact been designed to introduce kids to their culture through stories, poems and other activities in Malayalam. Learning in mother tongue helps the students to grasp the meaning in its full sense. Language defines one's identity. When someone tries to move apart from their mother tongue

eventually, he/her losses his own identity. Unfortunately, our society is obsessed with colonizer's language. Nowadays Malayalam medium schools are captivated by English medium schools. Most of the parents prefers English medium schools for their children even they are educated from Malayalam Medium. In the case of students, they also prefer English as the medium of instruction. As a global language English have its own merits but neglecting Mother Tongue is a series issue. Parents prefer to send their children to 'English-medium' schools regardless of the quality of education they offer because of the perception that mastery of the English language ensures success in later life. For example, in 2017-18, about 14% of those who were enrolled in private schools in India's rural areas and 19.3% in urban areas chose a private school because English was the medium of instruction. Experts argue that an English education is not always the best. "You can learn to read and write best in the language that you know. If you are taught in a language you don't understand then comprehension doesn't occur and results in rote memorization and writing it out through copying," explained Dhir Jhingran, a former Indian Administrative Services officer.

Need and Significance

In order to rejuvenate and preserve mother languages and help students associate more with what they study, we need to develop pragmatic strategies to make a transition from English to the mother language as medium of instruction. Though we may face daunting problems at the start, like inadequate teaching, lack of learning material and trained teachers, such a step is necessary. The change needs to be started from higher education institutes; one can then arrive at and adopt solutions at lower levels. The transformation cannot happen in isolation and needs to have a threefold focus: (1) Language teacher's training and recruitment; (2) Development of quality programs on language and literature; and (3) Research on languages.

This progression will form the basis of the education system's contribution to the vibrancy and growth of all Indian languages, and India's rich cultural heritage and traditions, and will help in increasing enrolment of students in higher education. In the process, we must not overlook English as a language. While students must learn English, it should come not at the cost of mother languages but along with them. The practice of teaching and learning should be reorganized such that students are able to attain a high level of proficiency in mother languages as well as in English or any other foreign language.

Objectives

- To identify the interest level of students in learning in their mother tongue.
- To study the attitude of students towards MT and English
- To suggest some measures to increase their interest to learn in MT
- To identify the difficulties faced by students in learning in MT

Methodology and Sample

The present study used objective survey method to identify the interest level of students in learning in their mother tongue.

- Selection of the variable involved in the study.
- Collection of the data using tools.

- Analysis of the data using statistical procedure like using tables and graphs.
- Interpretations of the findings.

Primary data of this survey is collected by questionnaire method. Due to pandemic restrictions questions are prepared in google forms and circulated to students through their respective teacher's Secondary data were collected from various topic related books; internet, research publication, newspapers etc. are used.

Tools Used in the Study

Investigator constructed only one form of instrument (questionnaire) one tool for collecting data. There are 22 questions both in English and Malayalam languages, around 160 students attended the questionnaire. The questionnaire was structured on Multiple choice questions along with spaces to give their suggestions.

Findings and Interpretation

Most of the respondents (46.9% of total respondents) belongs to the class 9 and 28.1% of respondents are in class 8. 25% of total respondents are from 10th standard. From 160 students 150 students are in English medium and 10 students are from Malayalam medium

Most of the students choose Malayalam (MT) as their preference for communication and selected MT as language helps you in understanding concept clearly and deeply (around 90%). But in learning students choose English. They think Malayalam as complicated language so they choose English. 24.5% students believes that our MT is neglected in school curriculum, its not a small percentage. Students already accepted that English is learner friendly language this fact vividly presented in this survey. As a global language English is wide spread and dominated several minds and this authority slowly kills our Mother Tongue. Complex word structure, spelling mistakes are the two major difficulties that faced by students in learning Malayalam. Due to this most of them scores less marks in Malayalam language compared to English language. About 91% students feel confident in Malayalam language but the irony is that in choosing a question paper in MT or English 71.3% of students choose English question paper. Among this only 58.1% students are confident in English. Most of the students still in a confused stage that whether their MT is inferior or not, to other languages. In that 5% students believes that Malayalam is an inferior language. It's such a pathetic condition. Only 27% students think that learning in Malayalam would be helpful for academic achievement. About 6 students in this survey have a contempt or rejection attitude towards Malayalam medium students.

Major Findings

1. Majority of the students choose English as learner friendly and Malayalam is a complex one
2. Most of the students doesn't know the equivalent Malayalam for the English words that we used in daily conversation
3. Most of the students choose English medium because it's a global language and it may provide more job opportunities,
4. Above average students can write and read in Malayalam without any mistakes but around 35% students are

not confident in their MT

5. Majority scores high scores in English language and believes that it's a superior language.

Implications

- Malayalam language experts need to contribute more words to Malayalam vocabulary
- Allocating more periods
- Language based quizzes
- Literary clubs Activities
- Remove the restrictions on speaking in Malayalam in institutions
- More competent Malayalam teachers

Conclusion

India has the largest youth population in the world, with 65 per cent of its population being below 35 years of age. We must incentivise this energetic generation to keep alive their mother tongues and dialects. We must teach our children to love languages and equip them to protect and nourish the beautiful legacy of languages that we have received from our ancestors. To not do this urgently and effectively will result in serious consequences for the preservation of our unique cultural identity. We cannot afford to regret this as yet another missed opportunity. Let's nurture the mother tongue. Let creativity bloom in full flourish. The mother tongue is the soul of expression.

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PROTECTION OF CHILDREN FROM SEXUAL OFFENCES (POCSO) ACT 2012-A CRITIQUE

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Abstract

Children are vulnerable and lack the courage or voice to defend or protest against offences happening against them. Child sexual abuse or sexual violence are the most heinous offence against children. It was not even addressed as an offence at all by the large majority of the public. Even if addressed, only rape was being considered as sexual abuse of children. Other kinds of sexual abuses were not paid attention by the concerned and hence it was easy for the abusers to exploit the children. This issue was being addressed by various Non Governmental Organizations, Women's Forums and even by the Ministry of Women and Child Development and as a result of this demand from all corners of the society, the Government enacted Protection of Children from Sexual Offences Act (POSCO) in the year 2012. This legislation is gender neutral as it equally applies to both male and female children up to the age of 18 years and both are protected against sexual abuse. The Act covers in it's ambit not only penetrative sexual assault, but also non penetrative sexual offences. The Act also provides for Constitution of Special Courts and in camera proceedings for protecting the privacy of the child. This paper attempts to analyse thee POSCO Act and make suggestions for the proper implementation of the Act.

***Key words**: Child sexual abuse, Penetrative sexual assault, In Camera Proceedings, etc.*

Introduction

Children have the same human rights, human dignity and quality of life as adults have. The children all over the world are subjected to various kinds of harassments and cruelties and the most despicable is that of sexual assaults and sexual exploitation. The mindless sexual tortures committed against children are increasing day by day in India. This is affecting the emotional and social growth of the child thereby depriving the child realise the potentials. The Indian Penal Code deals with sexual offences against women and punishments for the same. This article is an attempt to critically

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analyse the Protection of Children from Sexual Offences Act 2012.

Child under POSCO Act

Child is defined differently in different cultures and societies. Biologically, child is a human being who has not attained puberty. Various International Conventions and National Legislations fixes the age of child differently ranging from fourteen to eighteen. Section 2 (1)(d) of the POSCO Act defines child as any person below the age of eighteen years. This Act is gender neutral as child under the Act includes both male and female children below the age of eighteen years.

Child Sexual Abuse

Even though children are to be treated as the gift of the God, crimes against children especially sexual assaults are increasing at an alarming rate. Child sexual abuse happens when an adult uses the child for sex stimulation. The children are mostly abused by the relatives, neighbours, custodians etc. Sometimes the child or the family may be depending on the abuser. The psychology of the child to obey the elderly may be used to silence the child through force, threat or coercion. Children may not disclose this due to fear or bad consequences. In most of the cases, offenders are familiar to the child, thereby causing traumatic experience to the victim.

Legal Framework before POSCO Act

POSCO Act came into force only on 14th November 2012. Sections 354, 375,376,377, and 509 of the Indian Penal Code deals with sexual offences and outraging the modesty of women. The Information Technology Act 2000, sections 66E,67,67A deal with cybercrimes related to pornography. Pornography was dealt with under Young Persons (Harmful Publications) Act 1956.

Need for POSCO Act

Even though there were legislations, sexual offences against children were not properly addressed anywhere. There was mostly lack of evidence in child sexual abuse cases leading to acquittal of the accused. It was the need of the hour to have a comprehensive legislation covering all aspects for protecting children from sexual harassment and sexual assaults. Moreover, United Nations Convention on the Rights of the Child 1989, which was ratified by India on December 11, 1992 mandates States to take measures to prevent exploitative use of children. The Directive Principles of State Policy in Part IV of the Constitution of India under Article 39 (e) & (f) directs the Government of India to evolve policies for the welfare of children. The Constitution of India in Part III under the Fundamental Rights Chapter under Article 15 (3) empowers the State to make special provisions for children. Based upon this, the Government of India enacted the POSCO Act in 2012.

Objectives of POSCO Act

The Act defines different types of sexual offences against children and offers protection to the child victims. Act makes it sure that the wellbeing and the best interest of the child are of paramount importance. The provisions of the Act affirms that sexual exploitation and sexual abuse of children are heinous crimes that needs to be addressed effectively. The Act ensures that the right to privacy and confidentiality of the child is protected and respected by every person through all stages of the proceedings. The Act was amended in 2019 enhancing the

punishments for various kinds of sexual assaults including the punishment of death penalty.

POSCO Act in a Nutshell

The Act consists of 45 sections in 9 Chapters. The definitions of child, sexual assault and sexual harassment are dealt under Chapter 1. The detailed explanation of penetrative sexual assault and the punishment for the same is mentioned in Chapter 2. Chapter 3 discusses about using the child for pornographic purposes and the punishments. The punishments for abetment and attempt to commit offences are mentioned under Chapter 4. The procedure for reporting of cases under this Act are elaborated in Chapter 5. Chapter 6 provides for the procedure for recording statement of the child. The provisions for special courts are mentioned in Chapter 7. Chapter 8 deals with the procedure and powers of special courts and recording of evidence. Chapter 9 speaks about the responsibility of Central Government and State governments to create awareness about the Act.

Sexual Offences under POSCO Act

The primary object of the Act is to protect children from sexual offences. The Act distinguishes various sexual offences as sexual assault, penetrative sexual assault, aggravated sexual assault and aggravated penetrative sexual assault. The Act defines sexual assault under section 7 as touching the vagina, pens, anus or breast of the child or asking the child to do the same. It also includes doing any other act with sexual intention and that there is physical contact without penetration. Penetrative sexual assault under section 3 is penetration of penis or any other object into the vagina, mouth, urethra or anus of a child or makes the child to do so with him. Aggravated sexual assault under section 9 occurs when the child is subjected to sexual assault by police officer, public servant, and staff of jail or the person in trust or authority of the child. Using of deadly weapons, fire, heated substance, causing bodily injury or injury to sexual organs are also mentioned under this section. Aggravated penetrative sexual assault under section 5 is subjecting a child to penetrative sexual assault by police officer, public servant, staff of jail, or causing grievous hurt or bodily injury to the child.

Sexual Harassment under POCSO Act

Sexual 11 of the Act provides six instances when a person can be said to commit sexual harassment. Here person should have sexual intent to constitute offence under this section. Saying any word, making any sound or gesture, exhibiting any object or part of body or asking the child to exhibit his or her body. Also includes showing any object for pornographic purposes, contacting child through electronic or other means, threatening the child to use his or her body part or sexual act in electronic media etc.

Child Pornography under the Act

The Act under sections 13 to 15 deals with using child for pornography. Representing sexual organs of child, usage of a child for real or simulated sexual acts with or without penetration and indecent representation of child will amount to using child for pornographic purposes.

Reporting of cases under the Act

The child or any person who has knowledge about the offence under the Act shall inform the Special Juvenile Police Unit or local police. If the police is satisfied that the child is in need of care and protection, they must make immediate arrangement to admit the child into shelter home or nearest hospital within 24 hours of report. The matter has to be reported to Child Welfare Committee and Special Court.

Non Disclosure of Identity of Child

The Act makes provisions under section 23 for protecting the privacy and identity of the child. Act provides that the media reports shall not disclose the identity of the child including his name, address, photograph, family details, school, neighbourhood or any other particulars which leads to revealing identity of the child.

Recording Statement of Child

The procedure for recording statement of the child is provided under section 24. The child should be given a choice as to place or it can be at the child's residence. If possible, it should be recorded by a woman police officer not below the rank of Sub-Inspector. The officer shall not be in uniform and it should be ensured that the child is not coming into contact with accused during examination. Child cannot be detained in the police station at night and the identity of the child should be protected from public media. The presence of the parent of the child or any person the child trusts shall be ensured while recording statement of child.

Medical Examination of the Child

The medical examination of the child is conducted as per section 164 A of the Code of Criminal Procedure. If victim is a girl child, medical examination shall be conducted by a woman doctor. The presence of the parent of the child or any person whom the child trusts are ensured under the Act.

Special Courts

The Act mandates that State Government shall designate special court in each district for trying offences under this Act. Government shall appoint special public prosecutor for every special court for conducting cases only under the provisions of this Act. The special court creates child friendly atmosphere and allows family members or guardians or friend of the child to be present in the court. Throughout the trial, the court should ensure that dignity of the child is maintained and not aggressive questioning or character assassination of the child is permissible. Court also ensures that the identity of the child is not disclosed unless it is in the interest of the child. The Act states that the trial should be completed as far as possible, within one year from the date of taking cognizance. The child should not be exposed to the accused at the time of recording of evidence. The cases shall be tried in camera in the presence of the parents of the child or any other person in whom the child has trust and confidence.

Punishments under POCSO Act after 2019 Amendment Act

Section	Offence	Punishment
4(1)	Penetrative sexual assault	Imprisonment for a minimum of 10 years, which can be life imprisonment and fine
4(2)	Penetrative sexual assault on child below 16 years	Imprisonment for a minimum of 20 years, which may extend up to life and fine
6(1)	Aggravated penetrative sexual assault	Rigours imprisonment starting from 20 years, that may extend up to life and fine or with **death.**
8	Sexual assault	Imprisonment for a minimum of 3 years but that may extend up to 5 years and fine
10	Aggravated sexual assault	Imprisonment of either description from 5 years extending up to 7 years and fine
11	Sexual harassment	Imprisonment up to 3 years and fine
14	Using child for pornographic purposes	Imprisonment starting from 5 years and fine and for repeated conviction imprisonment for minimum 7 years
15	Punishment for storing pornographic materials involving child with an intent to share	Minimum fine of 5000 and for repeated conviction minimum fine of 10,000/-
17	Abetment of offence	Same punishment for the offence
18	Attempt to commit offence	Imprisonment of any description for the offence

Judicial Approach to POSCO Cases

The Supreme Court as well as High Courts are expressing concerns over the alarming number of POSCO cases being filed day by day. The courts are always showing protective approach to the victims and the families and in cases where there are proper evidences, the courts are providing maximum punishments as well to the accused. Some of the recent judgments are discussed here. In *Achyut Turi alias Babatu* v. *State of Assam* 2019 Cri.L.J 1235(Gauhati)- the father committed sexual assault on victim of 11 years and medical evidence also supported verbal testimony of the victim. The contention of the accused that the case was filed out of grudge was rejected and he was convicted. In *Amar Suklabaidya* v. *State of Tripura* 2019 Cri.L.J 1128(Tripura)- the appellant had

made gestures with sexual intent and it was held that he had committed the offence of sexual harassment under section 11 of the POSCO Act.

In *Rahul PR* v. *State of Kerala* (Decided on 26th Aug 2021) the Kerala High Court held that marrying the victim, after sexual assault would not save the accused from POSCO Act provisions. Here the petitioner forcibly took the victim, who was of 17 years to a rental house and raped her. He married her later and now living as husband and wife. Kerala High Court held that rape is not an offence of private nature but it is an offence against the society and settlement between the parties are not matters to be considered for quashing criminal proceedings against the accused. In *Attorney General for India* v.*Satish* 2021 SCC Online SC 42- a 39 year old man took the 12 year old girl to his house and on the pretext of giving her a guava, groped her breast and attempted to remove her salwar. When a case was filed under POSCO Act, the Bombay High Court held that skin to skin contact was essential to constitute offences under POSCO Act. The Honourable Supreme Court stayed the judgment holding that it would set a dangerous precedent. The Attorney General K.K.Venugopal in the appeal argued that if a person wears a pair of surgical gloves and feels a woman, he would not be punished as per this judgment and hence this judgment is outrageous.

Merits of POCSO Act

POSCO Act has introduced new concept of sexual offences where mere touch with sexual intent is treated as an offence. The definition of 'child' being gender neutral offers protection to both male and female children. The Act provides a comprehensive definition of sexual offences rather than penetrative assault. In POSCO cases, the accused is deemed to be guilty until proven innocent apart from the general rule of innocent until proven guilty. Another aspect to be welcomed is the working of Special Courts and the measures to ensure child friendly atmosphere throughout investigation. The protection of identity of the child for respecting the privacy is also an appreciable step. The child victim is provided compensation to meet their immediate needs. Section 8 of the Act ensures that the offender of sexual assault gets a minimum punishment of 3 years. Under this Act, a husband or wife can be prosecuted for engaging in sexual activity with the spouse under 18 years.

Lacunae of POSCO

The Act has many provisions for the welfare the children but still there are some deficiencies in the law and it's implementation. Due to vulnerable socio economic conditions of the victims, sometimes the victims may resile from the previous statement making the courts and the prosecution helpless. The working of the system is often affected by the general inefficiency of the criminal trial system viz resource shortage, lack of awareness of the public, unexpected outcomes, unreasonable delay, attitude of the society to child and family, cost factor etc. The Act is silent about consensual sexual activity of two minors and it is uncertain whether both of them should be punished under this Act. Section 22 (2) of the Act exempts punishment to a child from lodging false complaint under the Act. There are many instances where children are used as tool to lodge false complaint for threatening or

defaming others. Another thing is that the Act uses 'he' for the offender and it is silent as to whether the offender is a woman. The dividing line between offences of different categories is very thin and the investigating authorities often negligently or ignorantly invokes incorrect provisions of law for prosecution of the accused. Backlog of pending cases makes it impossible to take testimony of the child witness within one month as given under section 35 of the Act and thereby making it impossible to conclude trial in the stipulated time.

Conclusion

The Act is a self-contained one which consists of all the essential definitions and other measures for making the child comfortable during the whole process and for the time bound conclusion of trial. Still the problem lies in the lack of awareness of the stakeholders and the affected parties. Proper sensitization of all, including the police authorities, general public, special public prosecutors and especially children is the need of the hour. The objectives and legal provisions of this Act can be included in the curriculum of school students for making them aware of their rights. Along with child friendly procedures in the Act, proper and timely advice to the child and family to heal their grief and to make them free from fear and social isolation should also be provided. Joint efforts from police, prosecution, medical professionals and psychologists are needed for the proper rehabilitation of the children. The whole adjudication process needs more transparency and promptness for creating a feeling of credibility among the public. Added to this, the whole society should take it as their responsibility to protect the children and consider themselves duty bound to save the children and must ensure that sexual violence against the children are not taking place anymore.

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IMPACT OF LITERARY WORKS IN IMPROVING THE COGNIZANCE OF SECONDARY SCHOOL PUPILS ABOUT DISASTER MANAGEMENT SKILLS

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Abstract

Disaster reduction skills are seen to be very essential to the pupils of the present times, because of the recurrent emergence of pandemics such as Covid-19 and other natural disasters like floods. This study aims to analyze how English literary works imbibe several disaster management skills among the pupils, and thus emboldens them to overcome adverse situations that they may come across in their lives.

Key Words: *Cognizance, disaster, management, skills, pupils of Standard Nine, etc.*

Introduction

A disaster can be a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes. It is a situation that produces stress, personal injury, physical damage and economic disruption of great magnitude. Disasters can be classified according to how rapidly they begin and how long they last, as rapid-onset or cataclysmic disasters, or long term or continuing disasters. Rapid onset disasters include floods, earthquakes, cyclones etc. Slow-onset, long term or continuing disasters include epidemics, famines, civil wars etc.

Disaster management can be defined as the range of activities designed to keep control over disaster and emergency situations and to provide a framework for helping at-risk persons to avoid or recover from the impact of disasters. Disaster management deals with situations that occur prior to, during and after the disaster. It is rooted in the fundamental belief that we can do something about avoiding disasters and lessen the potential for substantial loss of life and property, or destruction of the environment on which human beings depend. It involves planning and preparedness to avoid catastrophes and mitigation to lessen the consequences from disasters. It aims at minimizing the losses at the time of a disaster and ensures the efficient use of resources.

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The major merits of having disaster management skills are three-fold. First one is that the possession of these skills helps us to reduce or avoid the human, physical and economic losses suffered by individuals, by the society and by the country at large. Secondly, the possession of disaster management skills helps us in the reduction of personal suffering. Thirdly, these skills aid us to speed recovery from disasters. Thus, disaster management or survival skills have become very crucial in the twenty-first century.

With the increasing number of disasters over years, investment in disaster risk reduction has become indispensable in the educational field. At present lessons are incorporated in textbooks that aim at developing disaster risk reduction skills and development of knowledge of skills and knowledge that can empower them. Each time a disaster hits, children are the one category that are afflicted to greater degree, displaying a wide range of psychological, social and emotional reactions. Hence emphasis of imbibing disaster management skills through the curriculum is indeed the need of the hour.

Need and Significance of the Study

The vulnerability of the Indian subcontinent towards disasters, both natural and man-made, is widely recognized. Its unique subcontinental dimensions, coupled with facts like its geographical location and the behavior of monsoon, make it one of the most hazard -prone countries in the world. India is vulnerable to various natural disasters like floods, droughts, cyclones, earthquakes, landslides, avalanches, forest fires and the like. Disaster occurs with great regularity and, despite preparedness to meet all contingencies, the economic and social costs on account of losses caused by natural disasters continue to mount year after year. Adding to this was the emergence of Covid-19 pandemic outbreak which was another challenging situation.

Education, especially the literary works that the students are studying as part of English language, explicitly or implicitly imbibe several values and skills in students. Thus, it functions as useful pedagogical tools to teach about different aspects related to disasters. All these values and skills are intended to equip them to face the challenges of twenty first century with confidence. Disaster management skills are one of those skills as it is clear in lessons such as "The Jungle Air Crash" and "On Killing a tree" of Standard Nine of Kerala SCERT syllabus. So, the investigator decided to conduct this study among the pupils of Standard Nine to analyze the impact of literary works in improving disaster management skills among them.

Statement of the Problem

The present study aims at finding out the influence of literary works in improving the disaster management skills of pupils of Standard Nine of Kerala SCERT syllabus. Therefore, the present study is entitled as "A Study on the Impact of Literary Works in Improving the Cognizance of Pupils about Disaster Management Skills among the Pupils of Standard Nine."

Operational Definition of the Key Terms

- Cognizance- It is the awareness or knowledge about someone or something. In this study it means the awareness of pupils about the ways to effectively manage adverse situations in life.

- Disaster- It is a sudden accident or natural catastrophe that causes great damage or loss of life. In this study, it means any challenging situation in life or more generally events such as Kerala floods or Covid 19 pandemic
- Management- It is the act or skill of dealing with people or situations successfully. In this study it means the ability to handle adverse situations like the Kerala floods or Covid 19 pandemic.
- Skills-It is the ability to do something well. In this project, it means the capability of pupils to overcome difficult situations.
- Pupils of Standard Nine-In the study pupils of standard nine refers to all the students studying in Class Nine in schools following Kerala state syllabus.

Objectives of the Study

1. To find the influence of literary works among the pupils of Standard Nine
2. To find the awareness to manage challenges in life among pupils of Standard Nine
3. To find the feelings of empathy towards people who have met with accidents among pupils of Standard Nine
4. To find the awareness about the fact that nature too survives despite difficulties among pupils of Standard Nine

Methodology

Survey method was used to collect data from the pupils of Standard Nine, about their disaster management skills and how their skills have improved after studying various literary works.

Population of the Study

The population of the study was the students of Standard Nine, studying in schools following the curriculum designed by the Board of Secondary Education Kerala State.

Sample

25 students of St. Johns H.S Kurumannu, Kottayam district were selected as the sample for the study.

Tool Used

A questionnaire for pupils was prepared to analyze the views of pupils. The questionnaire was examined by the teacher educator and necessary corrections were given. The final questionnaire consisted of thirteen questions.

Procedure

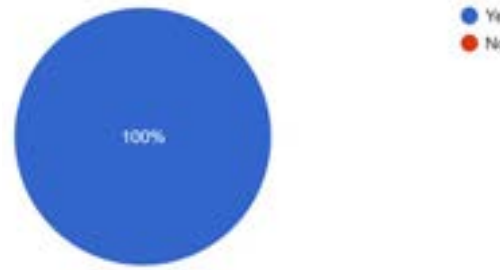
The questionnaire to know about the disaster management skills was administered to the pupils. Because of the Covid 19 pandemic condition, it was administered to the pupils via Google Forms.

ANALYSIS

I. To find the influence of literary works among the pupils of Standard nine

To get an idea about the influence of literary works in pupils, the following questions were asked:

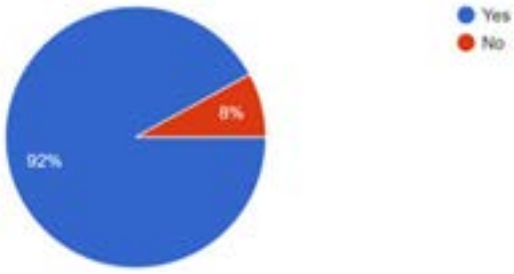
1. Have you got inspired or motivated by the lesson "The Jungle Air Crash "by Juliane Koepcke?



2. Do you feel that you can now face the challenges in life with confidence?

3. Do you think that you have the willpower to succeed in life?

4. Are you now able to manage challenges in your life effectively?



5. Are you now able to evolve strategies to come out of difficult situations?

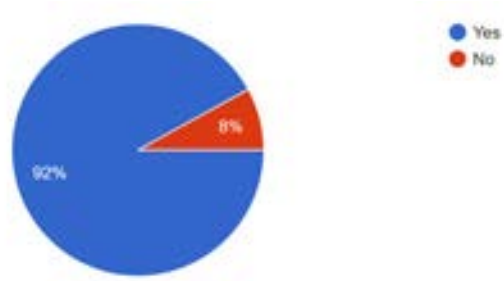


Table I
Table showing the responses of the students about the influence of literary works

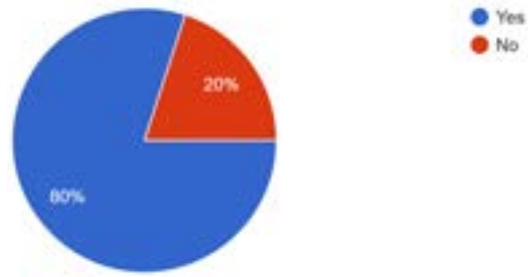
Q. No	Yes	%	No	%
1	25	100	Nil	Nil
2	24	96	1	4
3	24	96	1	4
4	23	92	2	8
5.	23	92	2	8

All the pupils opined that they got inspired and motivated by the lesson "The Jungle Air Crash". Almost all the students developed several skills to manage challenges in life after learning literary works.

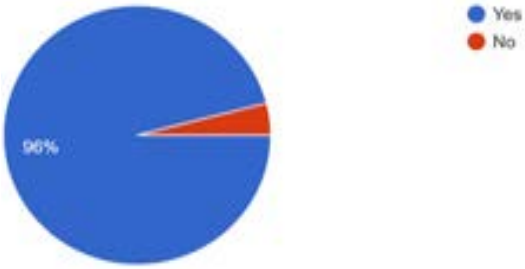
II. To find the awareness to manage challenges in life among pupils of Standard Nine

To understand the awareness of the pupils about the skills to manage challenges in life the following questions were asked:

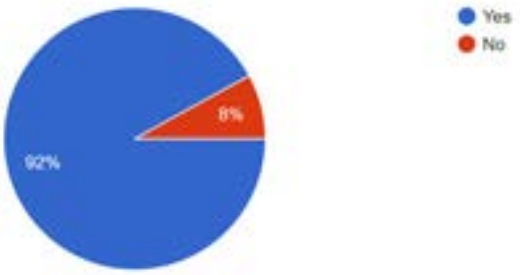
6. Are you aware of the measures to be taken to prevent and manage natural disasters like Kerala floods?



7. Do you now feel more courageous to face Covid-19 after learning the unit "Dawn of Hope"?



8. Are you aware of the do's and don'ts during natural disasters and other human disasters?



9. Do you think that you have the knowledge about skills to manage disasters in the future?

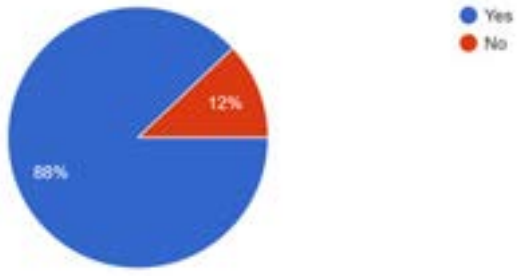


Table II

Table showing the responses of the students about their awareness to manage challenges in life

Q.No	Yes	%	No	%
6	20	80	5	20
7	24	96	1	4
8	23	92	2	8
9	22	88	3	12

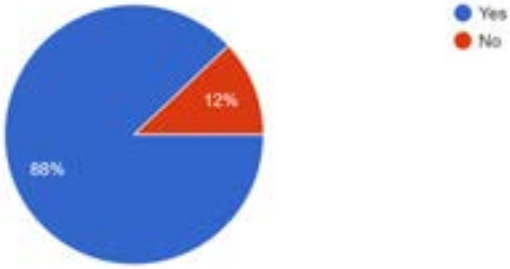
Almost all the students have good awareness about the measures to be taken to manage challenges in life. Most of the students have become courageous and skilled to manage disasters.

III. To find the feelings of empathy towards people who have met with accidents among pupils of Standard Nine

To get an idea about the feelings of empathy in the pupils, the following questions were asked:

10. Like the accident that happened to Juliane in the lesson, numerous accidents happen around us every day. Will you help people who meet with such accidents?

11. Do you feel compassion towards those who suffer from disasters or difficult situations in life?



12. Do you feel empathy towards people who suffer accidents?

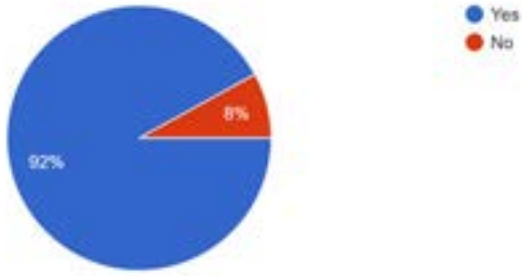


Table III
Table showing the responses of pupils about their feelings of empathy towards people who suffer from accidents

Q.No	Yes	%	No	&
10	25	100	Nil	Nil
11	22	88	3	12
12	23	92	2	8

All the students opined that they have the habit of helping people who suffer from accidents. Majority of them said that they have compassion and empathy towards people who suffer from accidents.

IV. To find the awareness of pupils about the fact that nature too survives despite difficulties among pupils of Standard Nine

To understand the awareness among pupils that nature to survive despite difficulties, the following question was asked:

13. Have you understood that like human beings, nature too survives despite adversities as it is clear in "On Killing a Tree"?

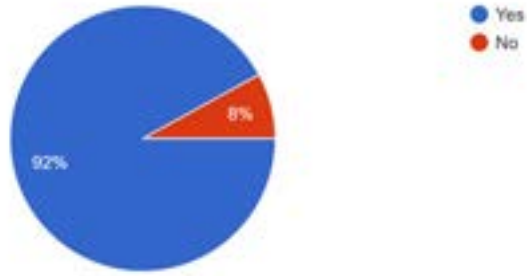


Table 4
Table showing the responses of the students about the awareness that nature too survives despite difficulties

Q.No	Yes	%	No	%
13	23	92	2	8

Majority of the students know nature too survives despite difficulties, just like human beings.

Findings of the Study

- All the students opined that they get inspired and motivated by literary works. Majority of the students said that they can face challenges in life with confidence and have empathy for others who face difficult situations in life.

- Most of the students are now able to courageously face difficult situations such as Kerala floods or Covid-19.
- All the students said that they will help others who suffer from accidents in life.
- Majority of the students said that they know nature too survives on its own despite adversities.

Implications/Suggestions

- Effective disaster management courses using literature as a tool should be implemented even at school level. The complicated aspects related to disaster management can be made simpler using examples from literature. Students will develop interest towards disaster management if it is taught this way.
- More literary works related to the theme of disaster management should be included in textbooks.
- Training should be given to the teachers to make them skilled in disaster management and thus transact it to the students. The teachers can prepare the students about the simple do's and don'ts that can be followed at times of disasters.
- Disaster management teams can be formed in schools to make the students further equipped in skills to tackle disasters. These teams can also play a significant role in managing disasters within or without the school campus.

Conclusion

Educating children with the aid of literary works is seen to be preparing vulnerable communities such as children to learn to cope with disasters. It helps them to understand how to expect, absorb and adapt to such events. If properly trained in disaster management skills, children will be least affected by disasters. Thus, Children must learn about disaster management, but in a manner that does not overburden them. A creative approach involving English literary works can supply them better insights into disaster risk reduction, preparedness measures, emergency relief and long-term recovery. This approach will result in the prevention and mitigation of social, economic and psychological effects of hazards. Then they will be able to address these crises with their knowledge, self-confidence, and survival skills in lesser times. It will in turn build a better, stronger and resilient nation.

Teachers, especially language teachers should recognize their role to empower children to explore and learn essential life skills especially disaster management skills. Introducing this creative approach of blending disaster management and literature will inculcate values such as compassion, accountability, and empathy towards the affected and vulnerable communities in the lives of children and improve their own coping skills in challenging situations.

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ROLE OF FOSTER CARE IN JUVENILE JUSTICE WITH SPECIAL REFERENCE TO JUVENILE JUSTICE (CARE AND PROTECTION) ACT 2015

Dr Meenakumary S*

Abstract

There is solid evidence in the Constitution of India, legislative enactments, and Supreme Court decisions that there has been a traceable shift in child rights jurisprudence in India. A facet of this change is the focus on family-based alternative care for children in need of care and protection in contrast to institutional care. Therefore, the time is right and the legal realm is lush for a comprehensive legal regime about foster care in India. The Juvenile Justice (Care and Protection of Children) Act, 2005 ("JJ Act") offers for foster care but, foster care has been restricted only to pre-adoption foster care in practice, which is a very restrictive remedy. Dominant legislation and guidelines in India including the Juvenile Justice Act (JJ Act) 2015, the New Adoption Guidelines 2016 and Regulations 2017, and Supreme Court rulings advocate for the same. Although the primary concern of non-institutional alternative care is, the best interest of the child and it must be the last resort for them, its acceptance is limited. In this article, an attempt is made to determine the role of foster care in the Juvenile justice system and the need to adopt rules and policies to the context, of the Juvenile Justice (care and protection) Act 2015.

Keywords: *Foster care, alternative Institutional care, Juvenile Justice, etc*

Introduction

Recent years have witnessed the expansion in foster care services as an appropriate alternative to the use of extensive institutional care for those children whose families are in a worse situation or position to take care of them. However, the authentic understanding as to how to implement effective, safe and authoritative foster care programmes is missing.[1] Larger numbers of young people come into foster care centers as teenagers but leave the system before reaching the age of eighteen. Normally those children who have been neglected or abused by

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society or even family members, those who didn't have a living parent or relative to take care of them, those habitually truant from educational institutions, or any other similar reason may have entered foster care centers. Bestowing to the latest estimates, each year nearly 100,000 teenagers including juveniles leave juvenile foster care centers for one or other reason.[2] Since overlap between the foster care and juvenile justice systems is common, as teenagers who come from unhinged or abusive family environments; poverty, illiteracy, criminal background and other harmful situations are at increased risk of entering both systems.

Foster Care: Meaning and Scope

A decisive prerequisite to probing into foster care is to define it and to differentiate it from adoption. Both these concepts come under the horizon of the juvenile justice system, however, there are two significant distinctions to be made. Firstly, adoption is permanent in nature that is once a child has been adopted by a family, he or she will live with them for ever while, foster care is temporary. Secondly, foster care centers or families look after the teen for a limited period until they go back to their own family. Foster care doesn't have with any legal rights of the child. In the case of adoptive families contrarily, the entire procedure of adoption happens legally.[3] 'Foster care' is the attention or care provided in the carers' home, on a temporary or permanent basis, through the process of the mediation of a recognized authority. For our convenience, foster care can be defined as a temporary placement of a juvenile or child with a foster family, they look out the child for a limited period of time till the child goes back into a permanent adoption or back to their biological family.[4]

Role of Alternative Institutional Care in Juvenile Justice

In its clear sense, alternative care is the concept of taking care of orphans and helpless vulnerable children deficient in the custody of their biological families and parents. It includes adoption, guardianship, kinship care, foster care, and other community-based provisions for children in need of care and protection. On the other side, some of the critical conditions while employing alternative care for children are the duration and permanency of placements that will guarantee the reliability, stability, and a feel of belongingness. It also involves a course of action that includes enduring planning aiming at reconnecting the children with their biological families or placing them with adoptive families.[5]

A system of alternative care to child protection demands a substantial move from the conventional unbiassed programming focus on specific groups of children that are juveniles in need of care and protection to the attainment of added sustainable and ongoing responses to the safety issues of the child. The main aim of the alternative care systems approach is to strengthen the protective nature of the atmosphere around children and to support children themselves in a better way, in order to ensure their welfare and accomplish their rights to protection from abuse, desertion, mistreatment, exploitation, and other forms of violence. The role of foster care as an alternative system is more significant because it aims at preserving children and strengthening them where their families are either at risk of separation or they are incapacitated, untraceable, poor income to meet the basic necessities of the child and it placing children in residential alternative

care units including adoption, foster care and kinship. Basically, they are gifts that help to buffer and support families or specifically child at risk.

Foster Care: Comparative Analysis

The foster care system in England is regulated by the Fostering service Regulation Act 2011 and the National minimum standards. The regulations are set for the assessment of the procedures with respect to the effective conveyance of fostering services by the fostering service providers, staff, and foster carers. Such regulation enlarges the sphere of nursing of the foster child and offers better protection through the assessment procedure of the foster carers. It provides different kinds of foster care systems like short-term foster care, long-term foster care, emergency foster care systems to the child, which consents enhanced protection to the child more suitable to the circumstance before him or her, after analysing the best interest of the child.

Statistically speaking, in the UK about 64,000 children live with nearly 55,000 foster families each day. Furthermore, as of 31st March 2017, the number of children in foster families increased from 50,570 in 2013 to 53,430. 63% of children fostered were placed within the council frontier and around 17% were fostered by his relative or friend while only 1% were placed with a carer who an approved adopter.[6]

In the USA, different state has different foster care system. It is sponsored by Department of Child Protective Services of the state. The procedure of getting licensing for foster parenting is similar to the process of adoption. Some legislation passed by the USA government on fostering caring are Foster Care Independence Act 1999 and Fostering Connections to Success and Increasing Adoptions Act 2008[7]. These acts remain to provide funding for the foster care youth especially for the purpose of education promotes the upliftment of the youth. For instance, the system of foster care in the most populous state that is California has recognized the idea of foster care to the fullest. It has the largest population of foster care youth in the nation with 55,118 children in the system in the year 2012.[8] In India, the visit to the foster home requires the permission of the child welfare committee were in California a home visit of parents seeking to foster by licensing worker. Furthermore, the requirement for foster Families is that minimum personal safety and space requirements must be complied with.[9] An opportunity is given to the foster parents to work with social services staff to offer an environment favourable to the child best suited for that home. Agencies are also there to grant licenses to provide certified family homes for children.

In France, depending on the standards set by the central government, foster care is delt under the French Child Protection system which is supported by the Child Welfare of local authorities and the Judicial Juvenile Protection. In France Judges involved in the matter of child protection in a crucial way because majority children have been placing in a foster family through court orders. They are having a system of long-term as well as short-term placements, and administrative actions are revised. One of the attractive features of foster care in France is that foster care families are provided with expert training provided by teams of the foster care agencies.[10]

A comparative analysis of foster care systems in these three countries highlight the fact that the foster system is enforced with full force with well-drafted legislation which provides exhaustive monitoring and assessment of foster parents before and after the teen is brought into the family. However, despite cautiously drafted regulations in these places and the efficient monitoring and assessing system, lacunae continue to be there with the system same as that of Indian Scenario. Overcrowding due to a selected number of foster homes, abuse in foster homes/group homes dragging the system back.

Foster Care System India: The Legal Framework

The constitution of India, cherishes many provisions for protecting the rights of children. Under article 15(3) directs the state to make special provisions for their protection. The other provisions lie under Article 14,19 and 21 of the constitution for safeguarding child's right. Article 39(e) and 39(f) under DPSP, direct the state to frame policies and rules in order to safeguard that the right of the child is not abused.

In *Laxmi Kant Pandey v. Union of India*[11], the Supreme Court held that in absence of family, a healthy atmosphere can be provided by alternative care systems like foster care, guardianship, and adoption.

The foster care system in India established to give effect the mandates of the Constitution. It was initiated for the first time in India in the late 1960s by the central government. The first non-institutional structure was proclaimed in Maharashtra in the year 1972.[12] Later it was renamed as 'Bal Sangopal Scheme- Non-Institutional Services' in 2005. In the late 1990s the state of Karnataka instigated a foster care programme having prime objective on focussing on destitute children. In India, the Indian child welfare Act 1978 was the first legislation. The Act recognized standards and rules for the placement of children under foster Care as well as adoptive centres. The main objective of the act was that to protect the best interest of the child. Under this Act, the foster child remains the legal responsibility of the state and the natural parents, unlike adoption.

Foster care was also provided in a rudimentary manner in the Juvenile Justice Act of 2000. Rules 34, 35, and 36 of Juvenile Justice (Care and Protection of Children) Rules, 2007 dealt with foster care, standards for selection of foster carer, and rule 36 dealt with pre-adoption care respectively. Rule 35 laid down eleven conditions for being an authorized foster parent in a foster care family. Foster care was one of the arrangements made by it since the primary objective of this policy is the institution of family and community founded care of children. Then later Integrated Child Protection Scheme (ICPS), 2014 was launched. ICPS supports family-based care of children that is foster care scheme shall support non-institutional forms of care.

In *Bachpan Bachao Andolan v. Union of India*,[13] the SC while referring to the ICPS, mentioned the limitations of institutional care and also recommended the necessary arrangements that promote foster care. Court added that, foster care is under-utilized as adoption is because the method majorly depends to protect the rights of the children to family care viz in India. The case also pointed out some of the gaps and inadequacies of institutional care

in India especially the lack of rehabilitation services.

In order to solve all the existed inadequacies, Juvenile Justice (Care and Protection of Children) Act, 2015. JJ Act is a comprehensive piece of legislation that deals with children found to be conflicting with law and those in need of care and protection by serving to their basic necessities through the channel of proper care, treatment, development, social re-integration. The most important highlights of the Act are:

1. Having a child-friendly approach in settling and adjudicating the matters relating to children
2. restoration of child in their best interest through the bodies established under the Act.

Under the new Juvenile Justice Act, 2015, registration of all inhabited care institutions, whether government or non-government or voluntary institution or institution availing Government funding or not is compulsory, for. Rehabilitation and restoration of child in need of care and protection are the key objective of the Act.[14]

Section 44 of the JJ Act, 2015, details the foster care facility. This section includes:

- Subsection (1) of sec 44, gives a brief idea on the concept of foster care, it says the children in the foster family are children in need of protection and care.
- Criteria for the selection of foster family and it is based primarily on the family's ability, prior experience capacity, and intention.
- Efforts are likely to make not to separate the siblings to the extent possible.
- Provides monthly funding by the State Government through District Child Protection Unit for the wellbeing of the foster care
- Provision for visiting the child in the foster family by the child's natural family as and when required at a regular interval with the approval of the committee.
- Responsibility of the foster family in proving necessities like education, health.
- Long-term foster care is not allowed by the committee if the child is regarded as an adaptable one.

The fundamental principles governing foster care are:

- Family-like environment for the child.
- Recognition of right of the child to nurture in a peaceful environment and providing a chance of reunification with their biological family.
- Principle of necessity, protection, security, safety and best interest of the child are the core idea of all the decisions regarding foster care.
- Preference of being placed twins or siblings in one family.

The Model Guidelines for Foster Care, 2016 formulated to give effect to the provisions of the Act states that children under the age group of six to eighteen can be placed under foster care. Children between the age group of 0-6 will not be admitted to foster care but adoption. The State Government has the supremacy to place a child who is in need of care and protection in foster care over an order of the Committee for an extended period of time. The authority for executing the foster care program in a district is the District

Child Protection Unit. The committee shall be entitled to take care of the decision associated with foster care children[15]

In R. Arivazghagan v. The Secretary to Government 2019 case, the Petitioner was the biological parent of the child was the petitioner himself, he challenged the order of the Child Welfare Committee directing that his child be put in foster care with the Respondents. The Madras High Court by analysis Section 42(1) of the JJ Act, stated that the Committee can place a child under foster care only after proper inquiry and for the best interest of the child, here the order declaring the fitness of the foster caretaker is being questioned and was set aside of the court.

In another well-known case of K.V. Muthu v. Angamuthu Ammal[15], the question before the Indian Supreme Court was that whether a foster son would be a member of a family or not. The Court said that a 'foster child' is really the child of another being, but he is brought up by another person as his own son, thus if a child is being brought up by a foster parent and giving care love, and protection like that of his own family and that child would consider as a member of that family.

Critical Analysis of Foster Care in India

Alternative care systems are conclusively beneficial to the child. The United Nations Guidelines on Alternative Care, 2010 and the Juvenile Justice Act, 2015 and other legislative policies uphold the need for non-institutional care or alternative care centers and have provided instructions and guidelines towards the operationalization of such intervention.

Universal research studies have shown that institutional care can be unfavourable to a child's overall performance and progress. In fact, children in institutions grew up with unknown children and staff and they might have experienced a feeling of loneliness and isolation from conventional society. Though the institutions have large numbers of children from different places there exist a chance of inadequate infrastructure or lack of trained staff often becoming sites for neglect, abuse, and exploitation of the child.

Such children grow up in detached care and lack positive relationships and bonding with an adult caregiver. In the non-institutional or alternative care approach, children get a chance to grow up in a family-based environment. Their needs are better met, they grow up with a sense of belonging, identity, positive self-image, and self-confidence and without the element of fear. They are better able to develop themselves as happy and constructive adults.

Sometimes children will get reunified with their parents and this will create a risk for families who may be absorbed in foster adoption. Foster parents may suffer from the idea of sending a child back to his biological family after a long period of attachment.

Another aspect is that, many of the children reach into the foster care centers because of the neglect, lack of safety, fear of abuse they have faced. Because foster care centers act as a temporary home for a child. As a result, they are permitted suffer from psychological traumas. In my opinion, foster families must be provided with proper sufficient training, parenting classes,

or attending special conferences, in order to deal with this kind of phycological trauma faced by the child during foster care. JJ act 2015 is silent about this aspect.

Foster care may involve children with special needs. Foster kids are an assorted population, some foster care centers have trained members but most of the family or units lack a trained caretaker.

In Indian scenario, foster care is encouraged by the segments that have previously been adopted to care for children in need of foster care centers, so far, they recognize that yet so much work leftovers to be done. Additional research work and legislative policies are necessary for the foster families to obtain compensation from the government and to create a channel between India's foster care and adoption systems which are presently totally separate through foster-to-adopt legislation.

A foster care system can consider to be one critical characteristic of fabricating a hearty family care option for children who have been separated from parental care. Each child's story is unique and each child has the right to be cared for in a family.

Conclusion and Recommendations

As far are a child in need of care and protection is concerned evidence shows that foster care can be very significant to the spectrum of care choices for children. Appropriate administration of foster care with proper structures, and resources, allows children to remain in a caring and loving family while authorities work towards family reintegration or permanent alternatives. Foster care may also provide some children with shelter in cases where neither return to family or adoption is in the best interests of the children. A basic quality of a safe foster care system is its decision-making control on entry into care; recruitment, assessment, and foster carer support; matching foster carers and children; amenities in assistance for children in foster care and evaluation of care placements which should be vigilant. The strategies and mechanisms needed for a safe and effective foster care include strong legal and policy frameworks that work for the best interests of the child; collaborative and coordinated efforts by a range of stakeholders; and research and public debate about the issue. More importantly, the foster care system has to be rooted in a holistic child protection system that gives priority to prevention and family support services.

Few recommendations in the light of the findings:

1. Effort must be initiated to invest more in foster care as a holistic national child care system, which prioritizes its attributes to prevent family separation and also provides a range of other alternative care choices for children.
2. Invest in both long-term and short-term foster care, centers and families aimed at preventing long-term family separation to ensure that children can be placed in the form of foster care most suitable to their individual needs.
3. Invest in acceptable resources to ensure that foster care is safe and harmless to the healthy environment of the child and allows for eventual national scale-up. This includes investing in a child welfare staff mechanism that is properly trained and reinforced to deliver high-quality foster care.

4. Effort must be taken by the Government to implement appropriate forms of foster care and legislations, policy frameworks that support foster care, exclusively for the welfare of the child, and to widen child care and protection systems.

5. Provisions under JJ Act should more emphasis on monitoring and evaluating foster care programs, including understanding children's mental health and psychological aspects in order to identify instances of practices areas of development.

6. Identifying the changing role played by different communities and non-governmental organisations in delivering good quality, safe foster care services and also support them in introducing new efforts, but ensure that all foster care provider is properly regulated and monitored.

In addition to providing an appropriate conceptualization of needs more research is required about physiological needs (for example identity and autonomy development) mental health, self-actualization, and educational needs of the child. education is more essential and which is also a basic need as far as a child is concerned. Above all the foster care units ensure that, whether the basis needs of the child get met or not.

Finally, an instrument of questionnaire could be developed so that it allows researchers to make more inclusive and legal statements about the needs of children but could also be exploited in practice as a valuation and monitoring instrument.[16]

I must say that in India growth of alternative care has been stable but slow. At least for a few foster cares remains as a concept unnoticed or unheard of and is often confused with the concept of surrogacy or with guardianship. Alternative care or foster care is considered "unnatural" and viewed from critical and often negative eyes. Scaring cases are tragic reminders of the truth that, a lot of neglect that children face often goes unnoticed. The most heart-touching fact is that even family-based care is not a safe option for a child.

Foster families rarely receive the kind of services and support they need from the public just like children. Government or authorities must make changes in the organizational set-ups, legislations, policies, guidelines, and practices but there is a need for an understanding and inherent thought process on the child welfare system.

Indian scenario, the concept of foster care will take time to get full-fledged. Nonetheless, our courageous and loving families are there to extend themselves for the betterment of a child's life and future by calling them as their own in the most tumultuous of times.

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STUDY ON THE AWARENESS ON POCSO ACT (2012) AMONG THE SECONDARY LEVEL TEACHER TRAINEES

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Abstract

Protection of Children from Sexual Offences (POCSO) Act, 2012 was formulated for safety and security of children. It is a special law that treats everyone under the age of 18 as child and lays down stringent punishment for anybody who commits sexual abuse or sexual assault against a child. The present study is an attempt to assess the awareness on POCSO Act among secondary level teacher trainees (N=30) of Kottayam district. A questionnaire on awareness on POCSO Act (2012) was used to collect information from the sample. The findings revealed that secondary level teacher trainees have moderate level of awareness about POCSO Act (2012).

Keywords: *Awareness, POCSO Act, Secondary level Teacher Trainees, etc*

Introduction

Child Sexual Abuse (CSA) is an alarming reality and being increasingly reported in India as well as globally. CSA is widely prevalent, yet hardly reported. In the name of culture and tradition, at times sexual violence against children is covered up, ignored or not even reported. A potential child is a potential national resource where as an exploited child can become victim first and then an offender. Safety, security, harmony, love and care are the things that a child needs to grow fully and, and to accomplish his or her potential. India is committed to establish an effective protection system for her children, including laws, policies, procedures and practices intended to prevent and address issues that could be detrimental to a child's well-being.

According to World Health Organization (WHO) Child Sexual Abuse (CSA) as "*the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not*

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developmentally prepared and cannot give consent, or that violate the laws or social taboos of society". CSA is a serious problem throughout the world. In order to understand child sexual abuse, the United Nations has defined child sexual abuse as contacts or interactions between children and an older or more knowledgeable child or adult (a stranger, sibling or person in position of authority, a parent or care taker). To deal with child sexual abuse cases, the Government has brought in a special law, namely, The Protection of Children from Sexual Offences (POCSO) Act, 2012. The Act has come into force with effect from 14th November, 2012 along with the rules framed thereunder.

The POCSO Act acknowledges almost every known form of sexual abuse against children as punishable offences, and makes the different agencies of the State, such as the police, judiciary and child protection machinery, collaborators in securing justice for a sexually abused child. In addition to this by providing for a child friendly judicial process, the POCSO Act encourages children who have been victims of sexual abuse to report the offences and seek redress for their suffering, as well as to obtain assistance to overcoming their trauma. The POCSO Act will provide a means not only to report and punish those who abuse and exploit the innocence of children, but also prove an effective deterrent in curbing the occurrence of these offences.

Although the implication of POCSO Act 2012 brought a favorable surf in the judicial system, the rate of child sex abuse was still the same .Union Women and Child Development Minister cited a report of the National Crime Records Bureau from 2016 indicating an increase in the number of cases registered under the POCSO Act 2012.To combat the rising cases of child sex abuse, the Union Cabinet approved amendments to strengthen the POCSO Act by including *Death Penalty* for aggravated sexual assault on children, besides providing stringent punishments for other crimes against minors.

Need and Significance of the Study

Education plays a vital role in transforming a society by making its children more aware, open minded and independent. Schools and other institutions that provide education have been playing a meaningful role in creating a nurturing environment for children where they can learn their core values and define their initial behaviours. Child sexual abuse is a pandemic in India, and massive steps need to be taken to stop it so children, the future of our country, are not destroyed. The government enacted the Protection of Children against Sexual Offences (POCSO) Act, 2012, to curb this menace wherein over half the children of India, or 53 percent, have faced one or the other form of sexual abuse, according to a large-scale government study conducted in 2007.

The Protection of Children from Sexual Offences Act (POCSO), 2012 strengthens the legal provisions for the protection of children from sexual abuse and exploitation. It provides protection to all children under the age of 18 years from the offences of sexual assault, sexual harassment and pornography. The United Nations Children's Fund (UNICEF) defines child protection as the "strengthening of country environments, capacities and responses to prevent and protect children from violence, exploitation, abuse, neglect and the effects of conflict." As education

systems have an important part to play in realizing child protection as children spend a significant amount of their childhood in the school environment, which is the next influential setting for the child after the family. Schools must mandatorily create and implement a Child Protection Policy and must efficiently include child protection into their processes, curriculum and staff recruitment. Bringing in the concept of child protection in education systems can lead to essential changes in the ways schools function, children's behaviour when attending school and the method in which teachers or school authorities interact with children.

Like rape, hitherto, including sexual offences against children, were dealt under IPC but a large number of offences against children were not adequately addressed by the existing laws. Such offences against children needed to be defined explicitly and countered through adequate penalties as effective deterrence. Therefore, to deal with such sexual offences against children, the Government brought in a special law *"The Protection of Children from Sexual Offences Act, 2012"*. The Act came into force with effect from 14th November, 2012 along with the Rules framed there under. The POCSO Act, 2012 provides for protection of children from offences of sexual assault, sexual harassment and pornography with due regard to safeguarding the interest and wellbeing of children.

In India, the education system deeply relies on teachers who are the center of teaching-learning process. The nation has large number of teaching professionals working at different levels of education. The increasing trend of sexual abuse of children by a family member places teachers in a more responsible post. Therefore, teachers are expected to play a vital role not only in education but also in protection of children. They can make a significant impact in children's lives because of their regular contact with them and consequently unspoken commitment towards child protection

We need to ensure that our children live a life of dignity free from sexual abuse, and the best way is to ensure that all children are educated about personal safety. Also, there needs to be enough public awareness campaigns to sensitize parents, teachers, children, guardians and even potential child abusers to nip the evil in the bud and put an end to the crime before it has the chance of being perpetrated. Balliappa and Ghosh (2015) reported that POCSO is a step in the right direction since it has considered approach to CSA including a nuanced approach to the types and intensities of sexual violence. It is important that teacher training and school level policies take account of the POCSO Act and also alert teachers and school heads to their legal responsibility to report abuse. Mandatory reporting is important to protect children from the evil of child sexual abuse. Teachers, schools, counselors, child care workers, doctors and nurses are mandated to report on any child sexual abuse cases to require by the law.

Hynniewta, B.,& et al. (2017) studied school teacher's knowledge and attitude on child abuse of Udupi District by using descriptive survey. Data was collected from 100 school teachers of urban English medium schools. It was found that Majority of the school teachers (84%) had average

knowledge on child abuse and have favourable attitude towards identification and reporting of child abuse.

Another study was conducted by Ramesh G, & et al. (2017) on 220 primary school teachers on Child Abuse and Neglect (CAN) of Kanpur City. The data was collected from 220 primary school teachers using structured close ended questionnaire. The results of the study revealed that CAN was either never or rarely noticed among 47.3%. The criteria of recognizing the CAN was known by 57% and 90% felt comfortable considering an expert opinion in their schools and so can report confidently.

The responsibility of supporting children who have been sexually victimized should be embraced by the whole community, but it is the professionals that work in this field who play an important role in empowering the healing process. These guidelines are therefore aimed at various professionals involved in providing services to the child and other affected persons including his or her family. Their objective is to foster better response mechanisms involving coordination amongst these professionals, so as to result in the evolution of a multi sector multi-disciplinary approach that will go a long way in achieving the objectives of the POCSO Act.

Awareness about laws is important for teachers because a large section of them are unaware that non reporting of sexual offences against children was punishable as well. There were instances where teachers were included in the list of accused in cases of such offences, just because they failed to report an offence when they come to know about it. A child spends half of his or her days in a school by the age of seven. Now teachers should maintain a clear and open communication line with the children so that in case of any incident the child is not in fear to report it. So it is very urgent and important to understand the level of awareness of POCSO Act among secondary level teacher trainees.

Objectives of the study

The major objectives of the study are

- To understand the level of awareness on POCSO Act among the secondary level teacher trainees
- To compare the level of awareness on POCSO Act among the secondary level teacher trainees with respect to various streams of study
- To compare the level of awareness on POCSO Act among the secondary level teacher trainees with respect to gender

Methodology

This study is carried out in a representative sample of 30 secondary level teacher trainees of various streams of study from Kottayam district of Kerala. The method adopted for this study was survey. The survey conducted through Google platform. This study was descriptive in nature.

Tool used

A self-prepared tool was used to conduct the survey. A questionnaire on the awareness on POCSO Act which consisted of 20 questions was used to collect data. The data was collected from the secondary level teacher trainees through Google platform.

Analysis and Interpretation of data

The data was collected from 30 secondary level teacher trainees. Maximum score obtained was 15 and minimum score was 10. The data was analyzed using descriptive statistics mean, median, standard deviation and frequency distribution

Objective 1

The first objective of the study was to study the level of awareness on POCSO Act among secondary level teacher trainees. The data was analyzed descriptively using mean, median, standard deviation and frequency distribution. The frequency distribution of the data is given below.

Table 1

Frequency distribution of scores of awareness on POCSO Act among secondary level teacher trainees

Class interval	Frequency	Percentage
5-8	0	0
8-11	2	6.67%
11-14	17	56.6%
15-17	11	36.6%
Total	30	100

Table 1 shows that all the cases fall within the range of 11-14. There are few cases at extreme ends. The highest frequency is 17; fall in the class 14-17. The lowest frequency is 2 fall in the class 8-11. Table 2 presents the descriptive analysis of the scores on awareness of POCSO Act among the secondary level teacher trainees.

Table 2

Descriptive analysis of the scores on awareness on POCSO Act among the secondary level teacher trainees

Variable	Number	Mean	Median	SD
Awareness of POCSO Act among secondary level teacher trainees.	30	13.4	13.29	1.75

The mean of the scores on awareness on POCSO Act among the secondary level teacher trainees is 13.4, and the median is 13.29, and standard deviation is 1.75. The investigator classified the scores on awareness on POCSO Act among secondary level teacher trainees into 3 categories namely 'high', 'moderate' and 'low' based on the mean and standard deviation is given in Table 3.

Table 3

Classification of the scores on awareness on POCSO Act with respect to different levels

Level of awareness	Range	Number of students	%
High	>=15.15	0	0
Moderate	11.65-15.15	29	96.67%
Low	<=11.65	1	3.34%

From the Table 3 it is clear that none of the teacher trainees scored above 15.15. There are 29 teacher trainees who scored between 11.65 and 15.15. They have moderate level of awareness and constitute 96.67% of the total sample. There is only one teacher trainee who scored below 11.65 and it constitutes 3.37% of the total sample. It shows that 3.37% of the sample has low level of awareness. The above data is shown in the following bar diagram.

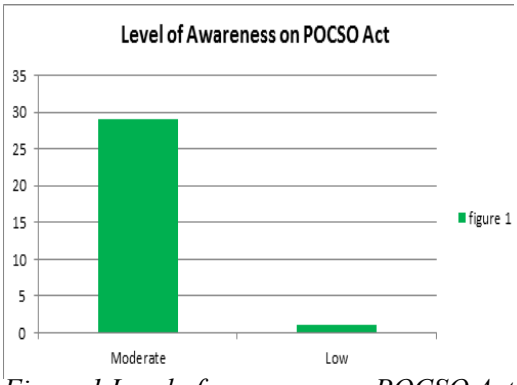

Figure 1 Level of awareness on POCSO Act

Objective 2

The second objective of the study was to compare the level of awareness on POCSO Act among secondary level teacher trainees with respect to the various streams of study. For this the investigator found out the mean and standard deviation of the scores on awareness on POCSO Act of arts and science students. Mean and standard deviation is given in Table 4

Table 4

Mean and Standard Deviation of the scores on awareness of POCSO Act of arts and science students

Variable	Streams	No of students	Mean	S.D
Awareness on POCSO Act	Arts	13	13.23	1.15
	Science	17	13	1.41

From the Table 4 it is clear that the mean value of the scores on awareness on POCSO Act among secondary level teacher trainees of the arts students is 13.23 and that of science students is 13. Therefore it is clear that arts students have slightly greater level of awareness than the science students.

Objective 3

The third objective of the study was to compare the level of awareness on POCSO Act among secondary level teacher trainees with respect to gender. For this the investigator found out the mean and standard deviation of the scores on awareness on POCSO Act of male and female students. Mean and standard deviation of the scores on awareness on POCSO Act of male and female students is given in Table 5.

Table 5

Mean and Standard Deviation of the scores on awareness of POCSO Act of male and female students

Variable	Gender	No of students	Mean	S.D
Awareness on POCSO Act	Male	12	13.08	0.83
	Female	18	13.11	1.22

From the table it is clear that the mean value of the scores on test awareness on POCSO Act of the boys is 13.08, and of girls 13.11. There are no much differences between the mean value of the awareness of POCSO Act with respect to gender.

Findings

- Secondary level teacher trainees have moderate level of awareness about POCSO Act
- The students of arts stream have more awareness on POCSO Act than the science stream students. Even though there is no much disparity ,arts students are more aware about the POCSO Act
- There is no much difference between male and female students about the awareness on POCSO Act

Suggestions

- School and society should take protective and awareness measures against child abuse.
- Introduction of age appropriate and progressive awareness cum skill building books for the students as per Indian ethos, on prevention of child abuse will be small but revolutionary initiative in schools.
- Schools as well as the teacher training institutes should introduce and initiate new awareness programmes in connection with POCSO Act
- Teacher trainees should be equipped with the skills in counseling and legal services in relation with child sexual abuse.
- Family and institutions should motivate the children and teacher trainees to openly talk about the problems related to child sexual abuse.

Conclusion

A child has the right to be protected from neglect, exploitation and abuse at home, and elsewhere. Child protection is about ensuring that children have a security net to depend on, and if they happen to fall through the holes in the system, the system has the responsibility to provide the child with the necessary care and rehabilitation to bring them back into the safety net. Now a day's children are facing lot of exploitation from family, school and relatives. So the need of protection on the child rights is necessary. POCSO Act 2012 is very essential for the protection of children from sexual abuse. And the awareness will help the victims to react or respond to the problem in such a good manner. Awareness is knowledge and it helps to the development of self. The POCSO Act may play key role if teachers are well aware of and takes leading role for the prevention and education of CAN. The Teacher education programme should include the Child Abuse and Neglect concept and Prevention Programme as an integral part of Curriculum along with POCSO Act.

Education is the best cure of any problem that arises in the society. The present society is facing number of problems which included violation of Right of children and women. These can be changed through education. Teachers need to be engaged through workshop mode and orientations on how the issues of sexual abuse can be handled by adopting better practices and techniques, rather than just consoling the child. The POCSO Act enacted in 2012, increased the scope for reporting sexual crimes against children. The POCSO Act also specifically lays down stringent punishment for exposing children to, or using them to create child sexual abuse material. The law lays down the procedures for reporting sexual crimes against children. Under section 19 of the act, it is mandatory to report sexual crimes against children, including when there is an apprehension that an offence under the act has been committed.

In this study the investigator reveals the picture of the awareness on POCSO Act among higher secondary among secondary level teacher trainees. We know that students are the future of our nation. Teacher trainees are the care givers of the children. So they should be aware about the POCSO Act and its applications and in this study majority

of the secondary level teacher trainees have moderate level of awareness about POCSO Act. This study also gives some suggestions to increase the level of awareness about POCSO Act among secondary level teacher trainees.

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ENCOURAGING PRO ENVIRONMENTAL BEHAVIOUR FOR SUSTAINABLE DEVELOPMENT

Dr. Bindu David*

Abstract

Pro environmental behaviour also known as green-, sustainable-, or environmentally-friendly (eco-friendly) behavior, is defined as behaviors in which individuals take protective actions toward the environment. Pro environmental behaviour include responsibly engaging with outdoors or recycling household waste and recycling but also can be adaptive responses to the impact of climate change such as purchasing sustainable products (e.g., local food, green cleaning products), conserving water or energy, or changing travel modes (e.g., from driving to walking or cycling) to buying an electric vehicle or building an off-grid home. The environment is one of the most important component for mankind. Interactions between humans and environment that occur continuously, will affect human behavior on the environment. It encourages people today to change their behavior in an effort to reduce the harmful effects of environmental damage. The author also emphasizes the importance of people forming a personal relationship with nature. In this respect, study of individual personal understanding of general terms of environmental education and the building of a common understanding seem of paramount importance.

Keywords: *Environmental behavior, Proenvironmental behavior, Environmentally friendly behavior, Areas of environmental behavior, Sustainable development*

Introduction

The environment is one of the most important component for human life. Interactions between humans and environment that occur continuously, that will affect the human behavior on the environment. Human attitudes and behavior will determine the good condition of an environment. The way humans treat their environment will have an impact on the quality of human life itself . Lack of human behavior that cares about the environment, causing global environmental damage. It enco

rages people today to change their behavior in an effort to reduce the harmful effects of environmental damage.

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Environmental protection and recovery are the main challenges facing our society today, therefore it is important to know and understand pro-environmental behavior in society, and what factors influence it.

Proenvironmental behavior is such behavior which is generally (or according to knowledge of environmental science) judged in the context of the considered society as a protective way of environmental behavior or a tribute to the healthy environment. Environmentally protective option is to write a letter by handwriting instead of using a computer, vegetarian lunch instead of a pork steak originated from mass breeding; a tribute to the healthy environment is e.g. a disposal of illegal dumping. The following terms can be used as equivalents for proenvironmental behavior "environment-protective behavior", "environment-preserving behavior", "environmentally responsible behavior"

The effect factor of pro-environmental behavior There are several factors that affect a person, be it positive or negative in pro-environmental behavior, among others; demographic factors (gender and years of education), external factors (institutional, social, economic and cultural); and internal factors (motivation, environmental knowledge, awareness, values, attitudes, emotions, locus of control, responsibility and priority) . According to Abedi Sarvestani and Shahvali (2009) in, human behavior (including pro-environment) influenced by beliefs, one's values and attitudes. Personal values are key to shaping attitudes towards the environment but not always followed by a proenvironmentalbehavior. Situational factors beyond the control of the poses in pro-environmental behavior. So, we need an intervention strategy that aims to support and removal of barriers to pro-environmental behavior.

"Pro-environmental behavior (PEB)" can be defined from the actor's standpoint and covers all behaviors undertaken by a single individual to reduce one's negative environmental impact with a clear intention to change the environment (Stern, 2000; Kollmuss and Agyeman, 2002). Although PEB is determined by a broad range of socio-demographic and psychological determinants, reviewing recent studies indicates that interdisciplinary exchange about them is still limited, posing a research gap in their study. This review merges the knowledge of both disciplines and gives an overview of recent research findings by creating an interdisciplinary survey. As Stern (2000) writes, the role of an individual's predisposition to act in a certain way can vary strongly depending on the context, the behavior and the actor. In our interdisciplinary review of the literature published in the last decade, we find that this important factor is not considered appropriately.

Encouraging Students' Pro-environmental Behaviour

The past decades have witnessed an increase in studies on the role of education in fostering pro-environmental behaviour (PEB). Especially where it comes to influencing behaviour in the long term, there is the belief that learning situations are needed wherein students can develop capabilities to think critically, ethically and creatively about environmental issues and make informed decisions about how to cope with environmental problems.

Environmental quality strongly depends on the human behavior patterns. University

students as a part of the young people of the community endure the burden of the past and current carelessness towards the environment. At the same time, they are the significant people who gain technical knowledge essential for advancing suitable solutions to change environmental behavior. Therefore, developing scientific knowledge on what inspire them to behave pro-environmentally is a significant area of concern that has practicable usages for moving on the way a sustainable future. In an examination of pro-environmentally related behavior, we used the protection motivation theory as a framework for explaining pro-environmental behavior Analysis indicated that the protection motivation theory constructs along with environmental attitude are able for explaining a significant portion of the variance in pro-environmental behavior. Based on the results, environmental attitude, self-efficacy, perceived costs of pro-environmental behavior and perceived intrinsic and extrinsic rewards of current environmentally unfriendly behaviors were the direct determinants of pro-environmental behavior, while rewards indirectly influenced pro-environmental behavior via environmental attitude and response costs. Also, response efficacy through self-efficacy had an indirect influence on pro-environmental behavior. Overall, considering the importance of environmental attitudes and self-efficacy, using measures and incentives to improve students' attitude on the necessity of environmental protection and improving their sense of self-efficacy can help increase the likelihood of pro-environmental behaviors in community.

The Importance of Pro-Environmental Behavior in Adolescent

The environment is one of the most important component for mankind. Interactions between humans and environment that occur continuously, will affect human behavior on the environment. Human attitudes and behavior will determine the good condition of an environment. The way humans treat their environment will have an impact on the quality of human life itself . Lack of human behavior that cares about the environment, causing global environmental damage. It encourages people today to change their behavior in an effort to reduce the harmful effects of environmental damage. Environmental protection and recovery are the main challenges facing our society today, therefore it is important to know and understand pro-environmental behavior in society, and what factors influence it . In this case, the adolescent is part of the community, which has the potential for environmental protection. Attitudes, knowledge, behaviors, concerns that the adolescent have about the environment either directly or indirectly influence future decisionmaking about natural resources and how their use can be sustainable. Therefore, the adolescent need to be motivate, in order becomes a pioneer for proenvironmentalbehavior, hence in that aged the challenges and modification toward environment more easily achieved. Scholars have various terms to describe behaviors that protect environment, such as; environmentally responsible behavior, environmentally concerns behavior, eco-friendly behavior, and pro-environmental behavior. Pro-environmental behavior is a behavior that harms the environment as little as possible but provides enormous

benefits to the environment. Based on Kaiser, pro-environmental behavior has six (6) indicators; (1) energy conservation, (2) mobility and transportation, (3) waste avoidance, (4) recycling, (5) consumerism, and (6) vicarious behaviors toward conservation. These six indicators can be used to measure the pro environmental behavior of each individual. These six indicators can be used to explain pro environmental behavior through a widely used theory, the theory of planned behavior (TPB). Based on TPB, there are several variables used to explain proenvironmentalbehavior, ie attitude towardbehavior,subjectivenorm,perception of behavioral control, and intention [10]. In order to improve pro-environmental behavior in the adolescent, the government has intervened in environmental education through "Adiwiyata Program". It was accordance revealed by Pooley &Connor andChankrajang and Muttarak that education is the most effective ways to solve environmental problems. Environmental education is considered important to increase individual knowledge, positive attitude, and eco-friendly behavior.

Sustainable development

Sustainable development is an organizing principle for meeting human development goals while simultaneously sustaining the ability of natural systems to provide the natural resources and ecosystem services on which the economy and society depend on. The desired result is a state of society where living conditions and resources are used to continue to meet human needs without undermining the integrity and stability of the natural system. Sustainable development can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainability goals, such as the current UN-level Sustainable Development Goals, address the global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice. While the modern concept of sustainable development is derived mostly from the 1987 Brundtland Report, it is also rooted in earlier ideas about sustainable forest management and 20th-century environmental concerns. As the concept of sustainable development developed, it has shifted its focus more towards the economic development, social development and environmental protection for future generations.Throughout the evolution of the concept of "sustainable development" there was consensus on the fact that it does not focus solely on environmental issues. The three interdependent and mutually reinforcing pillars are: economic development, social development, and environmental protection.

Sustainable development goals

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to **action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity**.

The 17 sustainable development goals (SDGs) to transform our world:

GOAL 1: No Poverty

GOAL 2: Zero Hunger

GOAL 3: Good Health and Well-being

GOAL 4: Quality Education

GOAL 5: Gender Equality

GOAL 6: Clean Water and Sanitation

GOAL 7: Affordable and Clean Energy

GOAL 8: Decent Work and Economic Growth

GOAL 9: Industry, Innovation and Infrastructure

GOAL 10: Reduced Inequality

GOAL 11: Sustainable Cities and Communities

GOAL 12: Responsible Consumption and Production

GOAL 13: Climate Action

GOAL 14: Life Below Water

GOAL 15: Life on Land

GOAL 16: Peace and Justice Strong Institutions

GOAL 17: Partnerships to achieve the Goal

Importance of Sustainable Development

Sustainable development is referred to as the idea that human beings should sustain by meeting their basic needs, while also making sure that the future generations are able to meet their basic needs.In other words, it is a way of organising the society by which it can exist for a long duration without compromising on the availability of resources for future generations.For sustainable development, factors such as preserving the environment and natural resources along with maintaining social and economic equality need to be followed.This concept is not new, it has been followed by many cultures over the course of history with an aim of maintaining a balance between man and nature as well as economy. The concept of sustainable development can be also referred to as environmentally sustainable economic growth.Sustainable development looks to create a balance between the economic, environmental and social needs.

How do you achieve environmental sustainability?

Here are some easy ways you can live more sustainably in your daily life:

- Cut down on red meat; it's a huge driver of food air miles and methane emissions.
- Switch to a green energy utility company - resources like wind, solar power, and geothermal energy are all infinite sources and will not deplete. Switching to a green energy company is one of the simplest and most effective ways to make a difference.
- Cook and bake your own meals and snacks, rather than relying on food in plastic and non-recyclable packaging. Cooking in batches is another great way to use less energy and reduce waste.
- Ditch the bottled water and drink from the tap. Plastic bottles take about 450 years to decompose, so consider if it's worth it for the sake of one drink. Instead, opt for a reusable water bottle or a water filter jug for your refrigerator.
- Rely less on your car and walk or cycle where possible.
- Replace incandescent light bulbs with more energy-efficient light bulbs.
- Eat locally- this supports food products with low air miles. In other words, try to eat foods that haven't traveled far to make it onto your plate.
- Resell, repurpose, or donate unwanted items. Repurposing may mean using old clothes or bed sheets for cleaning

rags or reusing glass jars to store dry foods.

- Replace saran wrap with reusable beeswax eco-wraps.
- Say no to the plastic straw with your iced coffee- bring your own instead!

Proenvironmental behaviour for Environmental sustainability

The ultimate goal of most studies on pro-environmental behavior is to provide information that can be helpful in reducing the negative environmental impact of human activities. In this context, it is important to be aware whether these studies use an intent- or impact-oriented approach. Intent-oriented measures focus on behaviors that are environmentally significant from an actor's point of view based on societal notions of environmentally significant behaviors. With these measures, what respondents deliberately do to benefit the environment, why some people act more pro-environmentally than others, and what can be done to persuade people to behave more pro-environmentally, for instance, could be examined. However, currently used intent-oriented measures tend to neglect behavior patterns with a strong objective environmental impact. Identifying the human activities with the strongest environmental impact is the focus of the impact-oriented measurement strategy. Here, knowledge from the natural and social sciences is integrated, more adequately reflecting the nature of most environmental problems. Furthermore, by using dependent measures such as CO_2 emissions, the impact-oriented approach usually yields more meaningful and thus more practically relevant information for citizens and policy makers. Impact-oriented measures are also more suitable for understanding how a household's total energy use is influenced by contextual factors (e.g., available technologies, infrastructures) whose impact is often hidden and outside of an individual actor's awareness or influence. Thus, impact-oriented measures are usually the better choice for studies interested in investigating how current living styles support or prevent sustainable behavior. The strategy used for assessing environmentally relevant behavioral patterns may also influence which predictors a study empirically identifies as the most important (Gatersleben et al., 2002). Using an intent-oriented measure, a study may find that psychological variables (e.g., perceptions, attitudes, values) are the most important determinants. Using an impact-oriented measure, a study may find that structural variables (e.g., income, type of car, house size) are most important. Research results regarding the environmental concern–pro-environmental behavior relation also underline the importance of these infra- or contextual factors. In the meantime, there seems to be general agreement to treat environmental concern as a general decisional precondition for considering the potential environmental impact of decisions rather than a direct predictor of actual behavior. Whether or not the more pro-environmental option is actually chosen depends on its subjectively perceived behavioral consequences (e.g., costs or inconvenience).

In closing, we want to mention that from our point of view, one central task of interdisciplinary environmental research will be to develop measures that integrate the advantages of the intent- and impact-oriented approaches. For this purpose, a list of reliable indicators would have to be developed that covers a substantial amount

of variance in the actual environmental impact of a household without resulting in a questionnaire that is too long or demanding for the respondents.

The Importance of Pro-Environmental Behavior and awareness of Sustainable development i in Adolescent

Pro-environmental behavior is a individual effort to reduce the negative impact due to the destruction of nature by improving and preserving the environment. Pro-environmental behavior becomes very important, especially among adolescents. That is because adolescents are the future assets of the nation that will be the policy makers about the environment so that sustainable. Adolescence is a good representative for the change of behavior especially pro-environmental behavior. The importance of adolescents' influence on family pro-environmental behavior is attracting significant research attention. Drawing from the socialization perspective, the impact of adolescents' environmental concern and environmental knowledge on parental pro-environmental attitudes and pro-environmental behaviour is investigated. The mediating impact of parental attitude towards an adolescent's influence and parental belief in the environmental knowledge of the adolescent is also explored.

Pro-environmental behavior is the behavior of individuals that contributes towards environmental preservation. Based on previous studies, measurement of pro-environmental behavior were investigated on several theories, namely theory of planned behavior (TPB) and value, belief, norms (VBN) by using aspects of pro environmental behavior. Young people with critical thinking, and good environmental education, are expected to behave more environmentally friendly for creating a sustainable future.

Adolescents today face the negative outcomes of climate change, and their pro-environmental behavior is crucial to mitigate these negative outcomes. Yet, we know little about what influences adolescents' pro-environmental behavior. Research shows that people's biospheric values and environmental self-identity, elicit personal norms to act environmentally friendly, which can induce a wide range of pro-environmental actions. Yet there is no evidence that these factors can influence pro-environmental behavior of adolescents, because this has only been studied for adults. Given that in adolescence, values, identities and moral structures undergo intense development, the question is whether these factors can motivate adolescents to act pro-environmentally. To address this question, we have conducted three studies with adolescents in Lithuania (Study 1: $N = 256$; Study 2: $N = 349$; Study 3: $N = 905$). We found support that adolescents' biospheric values and environmental self-identity were associated, via personal norms, with a wide range of pro-environmental behaviors, including recycling, environmentally friendly traveling, purchasing environmentally friendly goods and drinking tap water. Based on theory and the current findings, we suggest directions for policies aimed at promoting pro-environmental behavior of adolescents.

Pro environmental behaviour and energy conservation

Each individual holds egoistic, altruistic, and biospheric values to a certain level, and these values are proven to

correlate with pro-environmental behaviour. For instance, an individual minimizes the use of a personal car because the cost of driving his/her own car is higher than that of public transport (egoistic values); driving one's own car can endanger public health due to pollution caused by cars or driving a car may cause accidents if the driver drives carelessly and harms others (altruistic values); and driving one's own car pollutes or affects the environment to the point of threatening the life of animals and plants (biospheric values). However, an individual who prioritises altruistic values or biospheric values over egoistic values is not necessarily more environmentally friendly than individuals who prioritize egoistic values over other values . Nevertheless, in most cases, egoistic values indicates that individuals do not behave pro-environmentally because the costs required to behave environmentally friendly outweigh the benefits obtained. This is in contrast to individuals who hold altruistic and biospheric values because most of these individuals behave pro-environment and strongly associated with concerns for other's welfare and ecosystem . Empirical evidence suggests that such behaviour is a moral function that takes altruistic and biospheric values into account. Energy-saving behaviour including electricity-saving behaviours are actions to reduce electricity consumption and to reduce negative impacts on the environment

- Energysaving behaviours are the willingness of individuals to increase energy-saving efforts such as minimizing electricity consumption related to their positive awareness of the environment, adapting certain behaviours or changes in certain habits that can reduce energy consumption directly, and using equipment efficiently. Saving electricity through efficient and optimal use is the best way to reduce carbon dioxide emissions for each individual and in turn to help preserve the environment

In this age of an expanding world, climate change is considered as one of the major threats to our Mother Earth. Currently, it is reported that the energy sector's greenhouse gases (GHG) emission is the main contributor to global warming. Due to the rising concern, scientists and policymakers have heightened the focus on mitigating climate change issues by reducing the total energy consumption in several sectors, such as transportation, buildings, industry and agriculture. The latest global CO concentration recorded is significantly higher than the maximum safe concentration limit [1] and buildings are responsible for almost 32% of total global final energy use

Importance of Sustainable Agriculture

Generally, conventional agriculture is characterised by heavy tillage and heavy use of fertiliser to increase farm output. While fertilisers can help to spur plant growth, they often lead to polluted runoff water that ruins the natural environment. Additionally, the heavy use of fertilisers is not only harmful to soil ecology but can also be noxious to humans. Moreover, conventional farming fails to nourish the soil with the essential nutrients required to grow highly nutritious plants. The lack of emphasis on soil nourishment in conventional agriculture often results in crops that are highly susceptible to drought, diseases, and pests.

As opposed to conventional industrial farming, sustainable agriculture places a lot of emphasis on soil nourishment, which ultimately results in healthier plants and animals. Using natural fertilisers and crop rotation, while minimising the number of animals on a farm, sustainable agriculture ensures that soils are free from toxic compounds that may harm humans, animals, and pollinators. With healthy soils, plants can withstand attacks from pests and diseases because they have the required Sustainable agriculture frequently encompasses a wide range of production practices, including conventional and organic. A regionally integrated system of plant and animal production practices are designed to produce long-term results such as:

- Production of sufficient human food, feed, fiber, and fuel to meet the needs of a sharply rising population
- Protection of the environment and expansion of the natural resources supply
- Sustainment of the economic viability of agriculture systems

Sustainable farming mean producing food, fibre, plant or animal products without harming natural resources and land and considering social responsibilities such as working and living conditions of farmers and workers, the needs of rural communities, and health and safety of the consumer both in the present and the future.It takes into account economic viability and profitability and integrates it with environmental health and social and economic equity.Ideally, sustainable farming meets the needs of the present generation without damaging the ability for future generations to meet their needs.Sustainable farming reduces pollution by using natural fertilisers and using fewer chemicals. This means that farm produce is healthier and better for you, Sustainable farming incorporates integrated pest management to identify pests in the initial stages and target spraying only for particular pests limited to a particular area. This way it doesn't affect the bio-diversity and protects the natural wildlife.

Farmers also build shelters to keep natural pest eliminators such as bats, birds and insects who work to keep pests away.Even the waste produced by sustainable farming goes back into the farm's ecosystem and does not pollute the environment.Sustainable farming is a broad, umbrella term for growing food using methods that will also nurture society, the environment, and the economy. It is an alternative to mainstream, industrial agriculture practices. Sustainable farmers seek to support community health and well-being and to work with nature, while still being profitable businesses—though farms can also be run as non-profits or recreational projects.Sustainable farming is important because it offers a solution to the problems caused by the way most of our food is grown today. Today's industrial farming methods, many stemming from the Green Revolution of the 1950s and 1960s, are depleting our natural resources through monocultures and the overuse of pesticides and fertilizers, among other practices, while leaving people with unequal access to food and nutrition around the world.

Sustainable agriculture is a type of agriculture whose focus is on the production of long-term crops and livestock with minimal environmental impact. This type of agriculture tries to find the right balance between food production needs and

the maintenance of ecosystems within the environment.

In addition to food production, there are several overall goals related to sustainable agriculture, including saving water resources, reducing the use of agrochemicals, and promoting biodiversity in crops and ecosystems. Sustainable agriculture also focuses on maintaining the economic stability of Elmtaryds and helping farmers improve their Agri skills and quality of life.

Principles of sustainable agriculture

The FAO has identified five basic principles for improving productivity and sustainability in the global agricultural sector. These five principles aim to build a production system that is conducive to the ecosystem and meets human needs.

1. Improve the efficiency of resource utilization
2. Protect and improve natural resources
3. Improve the resilience of people, communities, and ecosystems
4. Improve rural lifestyle and social welfare
5. Sustainable agriculture requires responsible and effective governance mechanisms

What are the methods of sustainable agriculture

1. Apply more organic, natural biostimulants for growth promotion
2. Implement scientific field management and reasonable rotation
3. Early prevention of plant diseases, and removal of sources of infection, less dosage of pesticides, especially chemicals with high toxic.
4. Regularly improve the soil environment, ensure a good water vapor cycle, and balance the soil microbial flora.
5. Increase the efficient use of fertilizers to achieve the recycling of various elements.

Susstainable agriculture offers a much-needed alternative to conventional input-intensive agriculture, the long-term impacts of which include degrading topsoil, declining groundwater levels and reduced biodiversity. It is vital to ensure India's nutrition security in a climate-constrained world.While various definitions of sustainable agriculture exist, this study uses agroecology as a lens of investigation. This term broadly refers to less resource-intensive farming solutions, greater diversity in crops and livestock, and farmers' ability to adapt to local circumstances.Sustainable agriculture is far from mainstream in India, with only 5 (crop rotation; agroforestry; rainwater harvesting; mulching and precision) SAPSs scaling beyond 5 per cent of the net sown area.

Most SAPSs are being adopted by less than five million (or four per cent) of all Indian farmers. Many are practised by less than one per cent.Crop rotation is the most popular SAPS in India, covering around 30 million hectares (Mha) of land and approximately 15 million farmers. Agroforestry, mainly popular among large cultivators, and rainwater harvesting have relatively high coverage - 25 Mha and 20-27 Mha, respectively.Organic farming currently covers only 2.8 Mha — or two per cent of India's net sown area of 140 Mha. Natural farming is the fastest growing sustainable agricultural practice in India and has been adopted by around 800,000 farmers. Integrated Pest Management (IPM)

has achieved a coverage area of 5 Mha after decades of sustained promotion.

Conclusion

The ultimate goal of most studies on pro-environmental behavior is to provide information that can be helpful in reducing the negative environmental impact of human activities. In this context, it is important to be aware whether these studies use an intent- or impact-oriented approach. Intent-oriented measures focus on behaviors that are environmentally significant from an actor's point of view based on societal notions of environmentally significant behaviors. With these measures, what respondents deliberately do to benefit the environment, why some people act more pro-environmentally than others, and what can be done to persuade people to behave more pro-environmentally, for instance, could be examined. However, currently used intent-oriented measures tend to neglect behavior patterns with a strong objective environmental impact. Identifying the human activities with the strongest environmental impact is the focus of the impact-oriented measurement strategy. Here, knowledge from the natural and social sciences is integrated, more adequately reflecting the nature of most environmental problems. Furthermore, by using dependent measures such as CO_2 emissions, the impact-oriented approach usually yields more meaningful and thus more practically relevant information for citizens and policy makers. Impact-oriented measures are also more suitable for understanding how a household's total energy use is influenced by contextual factors (e.g., available technologies, infrastructures) whose impact is often hidden and outside of an individual actor's awareness or influence. Thus, impact-oriented measures are usually the better choice for studies interested in investigating how current living styles support or prevent sustainable behavior. The strategy used for assessing environmentally relevant behavioral patterns may also influence which predictors a study empirically identifies as the most important (Gatersleben et al., 2002). Using an intent-oriented measure, a study may find that psychological variables (e.g., perceptions, attitudes, values) are the most important determinants. Using an impact-oriented measure, a study may find that structural variables (e.g., income, type of car, house size) are most important. Research results regarding the environmental concern–pro-environmental behavior relation also underline the importance of these infra- or contextual factors. In the meantime, there seems to be general agreement to treat environmental concern as a general decisional precondition for considering the potential environmental impact of decisions rather than a direct predictor of actual behavior. Whether or not the more pro-environmental option is actually chosen depends on its subjectively perceived behavioral consequences (e.g., costs or inconvenience).

Sustainable development is largely about people, their well-being, and equity in their relationships with each other, in a context where nature-society imbalances can threaten economic and social stability. Because climate change, its drivers, its impacts and its policy responses will interact with economic production and services, human settlements and human societies, climate change is likely to be a significant factor in the sustainable development of many areas (e.g., Downing, 2002). Simply stated, climate change has the

potential to affect many aspects of human development, positively or negatively, depending on the geographic location, the economic sector, and the level of economic and social development already attained (e.g., regarding particular vulnerabilities of the poor, see Dow and Wilbanks, 2003). Because settlements and industry are often focal points for both mitigation and adaptation policy-making and action, these interactions are likely to be at the heart of many kinds of development-oriented responses to concerns about climate change.

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EFFECTIVENESS OF PROBLEM BASED LEARNING STRATEGY ON PROBLEM SOLVING SKILLS IN CHEMISTRY AMONG THE STUDENTS OF STANDARD ELEVEN

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Abstract

One essential goal of education is the development of students who are effective problem solvers for the information literacy age. Problem solving occurs in novel or difficult situations in which a solution is not attainable by habitual methods of applying concepts and principles derived from past experience. The responsibility of the school, especially at the higher secondary level becomes increasingly important to develop problem solving skills in students so that they may solve their problems independently for better adjustment in future complex society. Problem Based Learning is a strategy for posing significant, contextualized, real world situations and providing resources, guidance and instruction to learners as they develop content knowledge and problem solving skills. The present study aimed to investigate the effect of Problem Based Learning on Problem Solving Skills in Chemistry among the Higher Secondary Students. The study revealed that Problem Based Learning Strategy is effective to develop Problem Solving Skills in Chemistry among the pupils of standard eleven when compared to Existing Method of instruction.

Key words : Problem Based Learning ,Problem Solving Skills

Introduction

Education must not only provide relevant and appropriate knowledge but it must also equip students with the skills, needed for fulfilling career of lifelong learning. The main goal of education and core objective of teaching learning process is to develop the learners as critical thinking person. Research indicates that critical thinking and problem solving skills are not typically addressed in the classroom. A number of studies indicate that in the typical classroom, 85% of

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teacher questions are at the recall or simple comprehension level. Questions that elicit synthesis and evaluation skills of thinking are rarely asked. The teaching of problem solving skills is enhanced when problem solving skill is viewed as a collection of components skills rather than a single ability; instruction emphasizes the process rather than the product of problem solving. PBL is an instructional method where relevant problems are introduced at the beginning of the instruction cycle and used to provide the context and motivation for the learning that follows (Michael, 2004). In addition to course content, PBL can promote the development of critical thinking skills, problem-solving abilities, and communication skills. It can also provide opportunities for working in groups, finding and evaluating research materials, and life-long learning (Duch et al, 2001).

Need and Significance of the Study

In many classrooms, learning is a passive activity. Even in science classes, teachers rarely allow students to discover principles for themselves, but instead present the mathematical techniques and scientific law and then make assignments where students simply practice what they already have been taught. Science has become so close to life of everybody that both science as well as the quest for improved methods of teaching science constitute a significant feature of the present day science dominated world. One important approach to teaching children is to develop a classroom environment that encourages children to make discoveries. For this children have to learn and use a number of investigatory procedures commonly referred to as the process of science. Science learning should give knowledge and information about the world we live in. also, it should make provision for enabling the students to acquire control over scientific information, and develop scientific attitude and values. To realize these objectives of Science education students should be equip with the skills needed for fulfilling career of lifelong learning.

Problem Based Learning is a student centred instructional strategy in which students collaboratively solve problems and reflects on their experience. It has been widely adopted in diverse fields and educational contexts to promote critical thinking and problem-solving in authentic learning situations (Barrows, 1996). With this growing practice and popularity of PBL in various educational and organisational settings, there has been an increasing number of studies examining its effectiveness on the quality of student learning and the extent to which its promise of developing self-directed learning habits, problem-solving skills and deep disciplinary knowledge achieves its intended result (Elaine and Yewa , 2016). It promotes students active engagement with learning solving problem demands students participation. Learning becomes the act of discovery as students examine the problem, research its back ground, analyse possible solutions, develop a proposal, and produce a final result. Not only is this active learning more interested and engaging for students but also develops a greater understanding of the material since students find the information for themselves. Actively use the information and their skills to complete the project. Problem Based Learning provides authentic experience that foster active learning, support knowledge construction and nationally integrate school learning and real life. This curriculum approach also addresses state and national

standards and integrates discipline. PBL is a pedagogical approach that enables students to learn while engaging actively with meaningful problems. Students are given the opportunities to problem-solve in a collaborative setting, create mental models for learning, and form self-directed learning habits through practice and reflection(Elaine and Yewa , 2016).

Problem Based Learning is a curriculum development and delivery system that recognizes the need to develop problem solving skills as well as necessity of helping students to acquire necessary knowledge and skills. The core of Problem Based Learning Strategy is the use of problems as primary instructional input, leading the learners to improve knowledge and skills. In the Problem Based Learning approach learners work in groups to attain learning objectives. The learning needs of one student complement those of another as the group works together to address all the learning issues. Collaboration within the group is another important element of problem based learning. Problem Based Learning collaboration consists of materials selection, mutual support and co-operation, acknowledgement, continued reinforcement, mutual assistance and assurance in the integration of new information (Howard and Robyn, 1980).

The studies conducted provide clear evidence that Problem Based Learning prepares students to think critically and analytically and to find and use appropriate learning resources. The aim of PBL is to help students to seek out solutions and objectives that can set them on the road to lifelong learning. Therefore the investigator felt to work on Problem Based Learning, which is a teaching and learning strategy that will develop Problem Solving Skills among students.

Objectives of the Study

1. To study the distribution of pretest and post test scores of Problem Solving Skills in Chemistry among the pupils of Standard Eleven of experimental and control group.
2. To compare the means of the post-test scores of Problem Solving Skills in Chemistry among the pupils of standard Eleven of Experimental and Control group.
3. To compare the means of gain scores of Problem Solving Skills in Chemistry among the pupils of standard Eleven of Experimental and Control group.

Hypotheses of the study

1. There exists a significant difference between the means of the post-test scores of Problem Solving Skills in Chemistry among the Pupils of Standard Eleven of Experimental and Control Group.
2. There exists a significant difference between the means of the gain scores of Problem Solving Skills in Chemistry among the Pupils of Standard Eleven of Experimental and Control Group.

Methodology of the Study

The investigator selected the design for the present study true experimental pre-test, post-test non equivalent group design. In this design there are two groups. One of the groups serves as the experimental group and the other as the control group. The study aimed at finding out the effectiveness of Problem

Based Learning Strategy on Problem Solving Skills in Chemistry among the students of Standard Eleven of Kollam District.

The investigator selected pupils from two divisions of standard Eleven of Govt. Higher Secondary School, Anchal West in Kollam District for the experiment.

Tools used in the present study

The investigator used the tool titled 'Test on Problem Solving Skills in Chemistry' during the different phases of the study to measure the Problem Solving Skills of the pupils of Standard Eleven of the Experimental and Control group.

Sample for the study

The population for the present study covers all the pupils of Standard Eleven of Kollam District Kerala. The investigator selected Government Higher Secondar School Anchal West in Kollam District for the present study. From the school the investigator selected two Groups randomly as Experimental and Control consisting of 40 students each.

Analysis and findings

Objective 1

The first objective was to study the distribution of pretest and post test scores of Problem Solving Skills in Chemistry among the pupils of Standard Eleven of Experimental and Control Group. The mean value and SD of the pretest and post test scores of the Experimental and Control Group is given in table 1.

Table 1

Distribution of Problem Solving Skills in Chemistry among the Pupils of Experimental and Control Group

Variable	Group	N	Pretest scores		Posttest scores	
			Mean	SD	Mean	*SD*
Problem Solving Skills in Chemistry	Exp.Group	40	37.78	8.89	63.15	11.85
	Contr.Group	40	42.48	10.6	49.20	10.27

From the table 1 it is clear that the mean value of pretest scores of control group (42.48) is higher than that of the experimental group (37.78) and the mean value of the post test scores of the control group (49.20) is lower than that of the experimental group (63.15).

Objective 2

The second objective was to compare the means of the post-test scores of Problem Solving Skills in Chemistry among the pupils of standard Eleven of Experimental and Control group. To analyse this objective the investigator formulated a null hypothesis **$H0_1$**, which states that 'there exists no significant difference between the means of the post-test scores of Problem Solving Skills in Chemistry among the Pupils of Standard Eleven of Experimental and Control Group'. The investigator subjected the pertinent data to the test of significance of difference between the means of two independent groups. The level of significance (Probability of type I error) was fixed at .05 for degrees of freedom 78. The table value of *t* corresponding to *p* value .05 is 2.00. The investigator presents the detailed description of the analysis in Table 2.

Table 2
Difference Between the Means of the Posttest Scores of Problem Solving Skills in Chemistry Among the Pupils of Experimental and Control Group

Groups	N	Mean	SD	't' Value	Level of significance
Exp. Group	40	63.15	11.85	5.624	Significance at 0.05 level
Con.Group	40	49.20	10.27		

From Table 2 the investigator observes that the obtained t value ($t_{(78)} = 5.624, p < .05$) is significant at .05 level. From this, it is clear that there is significant difference between the means of the posttest scores of of the students in the experimental and control groups. Hence, the null hypothesis $\mathbf{H0_1}$ is not accepted and the corresponding research hypothesis states that there exists significant difference between the means of the post-test scores of Problem Solving Skills in Chemistry among the Pupils of Standard Eleven of Experimental and Control Group is accepted. Thus, it is evident that the subjects exposed to the Problem Based Learning Strategy achieved significantly higher with respect to the scores on Problem Solving Skills in Chemistry when compared with the control group.

Objective 3

The third objective was to compare the means of gain scores of Problem Solving Skills in Chemistry among the pupils of standard Eleven of Experimental and Control group. To analyse this objective the investigator formulated a null hypothesis $\mathbf{H0_2}$' which states that 'there exists no significant difference between the means of the gain scores of Problem Solving Skills in Chemistry among the Pupils of Standard Eleven of Experimental and Control Group'. The hypothesis was tested by using two tailed test of significance for uncorrelated groups. The investigator presents the detailed description of the analysis in Table 3.

Table 3
Difference between the Means of Gain Scores of Problem Solving Skills in Chemistry among the Pupils of Experimental and Control Group

Groups	N	Gain mean	Gain SD	't' Value	Level of significance
Exp.group	40	25.375	10.18	10.598	Significance at 0.01 level
Con.group	40	6.875	4.25		

From Table 3 the investigator observes that the obtained t value ($t_{(78)} = 10.598, p < .05$) is significant at .05 level. The null hypothesis is not accepted and the corresponding research hypothesis states that there exists a significant difference between the Means of gain scores on Problem Solving Skills Test in Chemistry among the pupils of Standard Eleven of Experimental and Control Group is accepted. Thus, it is evident that the subjects exposed to the Problem

Based Learning Strategy achieved significantly higher with respect to the scores on Problem Solving Skills in Chemistry when compared with the control group. In other words, the Problem Based Learning Strategy is found to be more effective than the existing method in improving Problem Solving Skills in Chemistry.

Findings

- Problem Based Learning Strategy is found to be more effective than the existing method in improving Problem Solving Skills in Chemistry among the pupils of standard Eleven.

Summary and conclusions

Problem solving is cognitive processing directed at transforming a given situation into a goal situation when no obvious solution method is available to the problem solver. The teaching of Problem Solving Skills is enhanced when problem solving skill is viewed as a collection of components skills rather than a single ability; instruction emphasizes the process rather than the product of problem solving. We also need to understand students' cohort, including their learning needs and styles, and contextualize teaching and learning so that they can apply theory through practice to enhance their learning and study abilities. Problem Based Learning is a Strategy for posing significant, contextualized, real world situations and providing resources, guidance and instruction to learners as they develop content knowledge and Problem Solving Skills. The major findings of the study reveal that the Problem Based Learning Strategy is more effective than traditional method of teaching. This method helps to develop Problem Solving Skills of the students. It is hoped that the findings of the present study will encourage, stimulate and even provoke further researches in the field of Chemistry.

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A STUDY ON STRESS AMONG ADOLESCENTS

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Abstract

This paper studies stress and its negative impacts on adolescents. An online survey was conducted with a sample of 60 adolescents selected randomly from Kanjirappally Grama Panchayath of Kottayam district. A google form questionnaire was used to collect data from the selected sample. Secondary data was collected from journals, websites, etc. to supplement the information. According to the results of the study, it was found that many students in adolescent age feel more stress before examinations and worry about examination results. More than half of the respondents feel academic stress and have health problems due to chronic stress. So, provision of stress management classes, better counselling facilities, appropriate leisure time, meditation, yoga, etc. are inevitable in schools.

Key Words: *Stress, Adolescence, Adolescent, etc*

Introduction

Adolescence represents a period of intensive growth and change in different aspects of a child's physical, mental, social and emotional life. The word 'adolescence' came from the Latin word 'adolescere' which means 'grow of maturity'. Adolescence is a period of exploratory self-analysis and self-evaluation. During the adolescence period, search for identity is very much affected by social groups like peers, parents, school and neighbourhood.

In comparison to western countries, the period of adolescence starts early in our country. Indian children achieve puberty earlier because of the favourable ranges from 13 to 19 among boys and 11 to 17 among girls. Whereas in the western countries, the adolescence extends roughly from 15 to 21 years and 13 to 21 years for girls.

Stress Among Adolescents - An Overview

Adolescence is the transitional phase of growth and development between childhood and adulthood. The World Health Organization (WHO) defines an adolescent as any person between ages 10-19. In Cambridge Dictionary, an adolescent

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is defined as 'a young person who is developing into adult'.

In Oxford Learner's Dictionary, the term 'stress' is defined as pressure or worry caused by the problems in someone's life.

Adolescence is the period marked by rapid physical growth and bodily changes. It represents not only physical changes. Adolescence refers to a period of intensive growth and change in nearly all aspects of a child's physical, mental, social and emotional life.

Reasons for stress in adolescence

There are many reasons for stress in the adolescence period. Adolescents experience more stress when they perceive a situation which is dangerous, difficult or painful and when they do not have the resources to cope. Some reasons of stress among adolescents are given below:

- Changes in their bodies.
- Family problems.
- Financial problems.
- Unhealthy competition among students.
- Over expectation of parents and teachers.
- Inferiority complex.
- Unsafe living environment.
- Too much of school works.
- Examinations.
- Parental pressure.
- Not getting enough time for leisure.
- Poor performance in school.
- Concerns about future.

Effects of Stress

When stress become overwhelming and prolonged, the risks for mental health problems and medical problems increase.

Emotional Effects: Chronic stress increases the risk of developing depression and anxiety in children. Those who suffer from stress may experience mood swings. They may alienate from their family and friends. It can also create nervousness and stress related disorders which in turn can affect their academic results. During this period, the adolescents who are not equipped with enough coping mechanism may be at increased risk of depression and suicidal tendencies. Academic stress can also lead to sleep disturbances and substance use.

Physiological Effects: Long-term stress can cause cardiovascular disease including heart disease, high blood pressure, abnormal heart rhythms, heart attacks and strokes. Stress can lead to obesity and other eating disorders. Girls with more stress can have menstrual problems like irregular and painful periods. One of the reasons for hair loss, gastrointestinal problems like gastritis and canker sores or mouth ulcers is stress. Stress can intensify tension headaches. It increases the production of stomach acid, which could lead to heat burn.

Long-term stress weakens our immune system, leaving us more vulnerable to infections. It causes your lives to release extra sugar into our blood which puts us at risk for type 2 diabetes overtime. Stress affects our body's digestive system which can lead to stomach aches, nausea and other tummy troubles. It makes muscles tense up and chronic stress can lead to backaches.

Cognitive Effects: If pressure due to stress continue, one may suffer from mental overload. This suffering from high level of stress can rapidly cause adolescents to lose their ability to make sound decisions. Cognitive effects include poor concentration and reduced short term memory capacity.

Behavioural Effects: Stress can affect adolescents' behaviour in the form of eating less nutritional food, increasing intake of stimulants such as caffeine, excessive consumption of cigarettes, alcohol and other drugs such as tranquillisers. Tranquillisers can be addictive and have side effects such as loss of concentration and dizziness. Behavioural effects of stress include disrupted sleep patterns, increased absenteeism and reduced work performance.

So, stress is not good for the mental and physical health of adolescents.

Review of Literature

Sandal and Goel (2017) in their study titled 'Prevalence of Depression, Anxiety and Stress among school going adolescent in Chandigarh' identifies a need for early and effective identification of depression, anxiety and stress (DAS) among adolescents that can prevent many psychiatric disorders at their nascent age. The objectives of the study were (i) to study the prevalence DAS among school going adolescents and (ii) to study the correlates of DAS. A cross-sectional survey of students from 9th to 12th standard who were studying in government schools were taken. The study found that the prevalence of DAS was high among school going adolescents in Chandigarh.

Allegrante and Thorlindsson (2016) in their study titled 'Stress and adolescents well-being: the need for an interdisciplinary framework' identifies several different but converging theoretical perspectives in an attempt to provide an overview of research relevant to stress in adolescence. The study present a framework to stress in adolescence. The study on diverse behavioral outcomes among adolescents, including substance use, suicidal behaviour, self-inflicted harm and delinquency.

Manikandan and Devi (2013) in their study titled 'A study on stress among adolescents learners' aimed to find out the level of stress among adolescent learners. The study was intended to assess the stress, social stress and academic stress. 350 adolescent learners (both male and female in the age group of 13-19) studying in various higher secondary schools in and around Madurai city Constitute the sample for this study. The Adolescent Stress Questionnaire was used for this study. The collected data analyzed using statistical techniques. The study found that the level of stress among adolescent learners in moderate in nature.

Need and Significance of the Study

Due to various physical, hormonal and behavioural changes during the adolescence period, it becomes a studying point to many mental health issues including depression and anxiety. Some children do not tell others when they feel stress. It is dangerous for them in all aspects. Stress can kill brain cells and even reduce the size of the brain. Chronic stress has a shrinking effect on the prefrontal cortex, the area of the brain responsible for memory and learning. It can increase the risk of psychiatric disorders. It speed up the aging process.

If the parents or teachers suspect the features of stress, it can be detected during early stages. There are many stress management techniques for students. Get enough sleep, exercise regularly, take calming breaths, listen to music, eat a healthy diet, use positive thinking, talk about the problem, take a break, meditation, yoga etc. are some among these. If the students, parents and teachers are aware of

the stress management techniques, it will be helpful to students to gain back their normal happy life.

Objectives

- To study the academic stress of adolescents.
- To identify the reasons behind stress among adolescents.
- To study the health problems of adolescents due to stress.
- To study their awareness of stress management techniques.

Major Findings

1. More than half of the respondents feel academic stress.
2. More than half of the respondents have negative impact of stress in their studies.
3. Majority of the respondents feel more stress on Monday.
4. Majority of the respondents are of the opinion that stress do not help to complete their works on time.
5. Half of the respondents meet their friends when they feel stress.
6. More than half of the respondents feel more stress before examinations.
7. Most of the respondents become inactive when they feel stress.
8. Majority of the respondents get enough leisure time at school.
9. Majority of the respondents get counselling facilities in school.
10. Majority of the respondents worry about examination results.
11. More than half of the respondents have health problems due to stress.
12. Above half of the respondents are aware of stress management techniques.

Implications

- Parents and teachers should recognize the signs of stress. For that, they should observe their children keenly. They should be alert about their changes in behaviour.
- Parents should talk with children and allow them to discuss their stressful situation. They should not allow children to study for long hours under stressful situation.
- Parents and teachers should not give high pressure on students.
- Teachers should be aware that they are not giving overload in the form of homeworks and assignments to children. Frequent class test should be avoided since most of the students feel stress due to examinations.
- Meditation should be practiced everyday at school. Yoga should be included in the curriculum.
- Schools should ensure that students get adequate leisure time everyday.
- Schools should provide better counselling facilities to the adolescents.
- Schools should provide stress management classes for them.

Conclusion

Adolescence is a transitional period of major physical and emotional changes which can result in significant mental stress. This study shows that many adolescents feel stress especially academic stress and it negatively affects their studies. Most of them feel more stress at home. The main reason for their stress is examinations. So, parents and teachers should take necessary methods to reduce stress among them. Teachers and parents should make them

aware of the different stress management techniques. Many students have health issues due to stress. Parents and teachers should identify the symptoms of stress as early as possible so that, preventing them from depression, anxiety, substance use and suicidal tendencies.

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EFFECTIVENESS OF SIMULATION BASED CLINICAL SKILL EDUCATION ON KNOWLEDGE AND PRACTICE REGARDING ADMINISTRATION OF INTRAMUSCULAR INJECTION AMONG UNDERGRADUATE NURSING STUDENTS

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Abstract

Background : OSCE has been used as both evaluative and teaching tool for graduate and postgraduate students across the globe. It consist of a circuit of station connected in series, with each station devoted to assessment of particular competence using predetermined guidelines or checklist. Simulated OSCE based clinical skill training has greater role in improving psychomotor skill of participants. It also reduces the stress level to a greater extent by the multiple short stations of clinical performance. Materials and methods: Pre experimental one group pre test post test research design. Structured knowledge questionnaire consists of 20 multiple choice questions and an observational checklist consists of 52 items used to collect data from 30 undergraduate nursing students. The data analyzed by using SPSS v 20. The effectiveness of simulated OSCE Based clinical skill education on knowledge and skill in administering IM injuction was assessed by using paired t test . Results: The result of the study conveyed that before the teaching programme 86.7% of students had average knowledge , 13.3% had good knowledge , none of them had very good knowledge . After implementation of intervention the result revealed that no one had poor or average knowledge 6.7% had good knowledge &93.3% had very good knowledge. And after the simulation based clinical skill education the practice of students in administration of IM injection improved from 96.7% had poor skill 3.3% had average skill & none of them had very good skill to 40% had average skill &60% had good skill. It also found that 73.3%

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students prefer OSCE & 26.7% prefer demonstration as the effective teaching method. Conclusion: The result shows that there is significant increase in post-test knowledge (90.65%)and skillscore (72.25%) regarding administration of IM injection compares to pre-test knowledge score 47.35% and skill score 33.32%. This reveals that simulation based skill education is an effective method in improving the knowledge and practice.

Key Words: *Simulation Based Clinical Skill Education, Knowledge and Practice, IM Injection, etc.*

Introduction

The OSCE is a versatile, multipurpose evaluative as well as training tool that can be utilized to evaluate and educate health care professionals in a clinical setting. It assess the competency based on objective testing through direct observations. It comprises of several station in which participants are expected to perform in variety of clinical tasks within a specified time period against criteria formulated to clinical skill. Simulated OSCE is more valid than traditional approach to clinical examination[1]. It is used in medical and nursing education to allow students to practice & improve their clinical and conversational skills for an actual patient encounter. This type of training is very valuable to equip students with a minimal of technical and non-technical skills before they use them in practice setting.[2] Intramuscular (IM) injection is an administration of medications parenterally through a skin puncture by a syringe and a needle deep into a large muscle of the body for prophylactic or curative purposes. Intramuscular (IM) injection is one of the common methods of drug administration technique. Administering an IM injection is a complex psychomotor task that requires skill and knowledge on the part of the healthcare professional who is performing the procedure. Although intramuscular (IM) injections are frequently referred to as a 'basic skill' they involve a complex series of considerations relating to type and volume of injection, medication to be given, technique, site selection and equipment. The use of OSCE as training tool has great potential as the learners can gain insight in to the minute elements making clinical competency as well as feedback on personal strength and weakness.

Materials & methods

In the present study the researcher had selected a quantitate approach with Pre experimental one group pre test post test research design to assess the effect of simulated OSCE based clinical skill education on intramuscular injection. A total of 30 second year B.Sc nursing students of Pushpagiri College of nursing, Thiruvalla were selected using simple random technique. Tool consists of structured knowledge questioner &observational checklist. The questions was framed in English and it comprised of Baseline Profoma and 20 multiple questions on knowledge and observational check list consists of 52 items. There are 5 sections in the tool, based on each OSCE stations which include preliminary assessment, preparation of medication, patient and site preparation, administration of medication and post procedure care including

documentation. The score is divided in to very good, Good, Average and Poor. Written consent was taken from all the participant before the study. The study was approved by the institutional ethical committee of Pushpagiri College of Nursing.

Statistical Analysis

Analysis was performed by using descriptive and inferential statistics. To determine the skill and knowledge in administering IM injection, mean, mean percentage and standard deviation was used. The effectiveness of simulated OSCE based education was computed by paired t-test. Association between knowledge and skill was calculated by chi-square test. It was 30 minutes teaching program Subjects were divided into 3 groups of 10members.Then demonstrated the intramuscular injection procedure using simulated OSCE based clinical skill training method to each group. On the 7th day the investigators reassessed the knowledge and skill by knowledge questionnaire and observational checklist

Results

1. Description of baseline variables

In the baseline variables we have assessed the previous knowledge on administration of IM injection, previous exposure to administering IM injection and previous exposure to OSCE**.**

It is found that 73.3% students prefer OSCE and 26.7% prefer demonstration as the effective teaching method. It is also found that 53.3% students have previous knowledge on IM injection from clinical experience while 33.3% from curriculum, 10% from seminars and workshops and 3.3% from news and T.V. All the students have administered IM injection before.36.7% have previous knowledge regarding OSCE from seminars and workshops while 33.3% from curriculum, 26.7% from colleagues and 3.3% have not heard about OSCE. 86.7% students have previous exposure to OSCE workshops and 13.3% have no exposure.

2. Findings related to knowledge of undergraduate nursing students on administration of IM injection before and after the simulation based clinical skill education

Table 1
Distribution of samples according to knowledge regarding administration of IM injunction

knowledge	Pre-test		Post test	
	Frequency	%	Frequency	%
Poor	0	0	0	0
Average	26	86.7	0	0
Good	4	33.3	2	6.7
Very good	0	0	28	93.3

Among the samples 86.7% o the undergraduate nursing students had average knowledge, 33.3% had good knowledge, and none of them had very good knowledge before the structured teaching programme. After the implementation of the interventions the results revealed that no one had poor or average knowledge. 6.7% had good knowledge and 93.3% had very good knowledge

Post-test mean score si 18.13(90.65 %) with SD of 1.570 and pre test mean score is 9.47(47.35%) with SD 1.833

3. Findings related to practice of under graduate nursing students on administration of IM injection before and after the simulation based clinical skill education

Table 2
Distribution of samples according to practice regarding administration of IM injection

Skill	Pre-test		Post test	
	Frequency	%	Frequency	%
Poor	29	96.7	0	0
Average	1	3.3	12	40
Good	0	0	18	60
Very good	0	0	0	0

Among the samples 96.7% of the undergraduate nursing students had poor skill, 3.3% had average skill and none of them had good and very good skill before the intervention. After the simulation based clinical skill education the revealed that 40% average skill and 60% had good skill in administering IM injection and none of them had poor skill in performing the injection.

4. Findings related to association between pre-test knowledge and practice of undergraduate nursing students on administration of IM injection

There is no association between knowledge and practice of undergraduate nursing students on administration of IM injection.

Chi square (N=30) 0.195; p >0.05 ie, p =.390

5. Findings related to effectiveness of simulation based clinical skill education on knowledge and skill in administering IM injection among undergraduate nursing students

Table 3
Mean, SD, and 't' value of knowledge on IM injection

Knowledge	Mean	SD	t value	P value
Pre test	9.47	1.833	26.23	0.00001
Post test	18.13	1.570		

Result indicating that a significance increase in the knowledge of undergraduate nursing students. Post-test (mean = 18.13, SD = 1.570) over pre test (mean = 9.47, SD = 1.833) .

Table 4
Mean SD, and 't' value of practice on IM injection

Practice	Mean	SD	t value	P value
Pre test	17.33	4.551	16.187	0.00001
Post test	37.57	3.848		

Result indicates a significance in the practice of undergraduate nursing students. Post test (mean = 37.57, SD =3.848) over the pre-test (mean = 17.33, SD = 4.551) .

The t value of pre test and post test knowledge is 26.23 and that of practice is 16.187. This reveals that the knowledge and practice of undergraduate nursing students were increased after the implementation of the simulation based clinical skill education.

Discussion

The present study is aimed to primarily to assess the effectiveness of simulated OSCE based clinical skill education on knowledge and skill in performing intramuscular injection among

undergraduate nursing students. It is found that 73.3% students prefer OSCE and 26.7% prefer demonstration as the effective teaching method. It is also found that 53.3% students have previous knowledge on IM injection from clinical experience while 33.3% from curriculum, 10% from seminars and workshops and 3.3% from news and T.V. All the students have administered IM injection before.36.7% have previous knowledge regarding OSCE from seminars and workshops while 33.3% from curriculum, 26.7% from colleagues and 3.3% have not heard about OSCE. 86.7% students have previous exposure to OSCE workshops and 13.3% have no exposure.

Among the samples 86.7% o the undergraduate nursing students had average knowledge, 13.3% had good knowledge, and none of them had very good knowledge before the structured teaching programme. After the implementation of the interventions the results revealed that no one had poor or average knowledge. 6.7% had good knowledge and 93.3% had very good knowledge

Among the samples 96.7% of the undergraduate nursing students had poor skill, 3.3% had average skill and none of them had good and very good skill before the intervention. After the simulation based clinical skill education the revealed that 40% had average skill and 60% had good skill in administering IM injection and none of them had poor skill in performing the injection**.** The finding of the study was supported by an experimental study with one group pre and post interventional design was conducted to evaluate the effectiveness of OSCE method of examination by teachers for BSc (N) midwifery students in selected nursing colleges, Salem, Tamil Nadu in 2013. 60 Midwifery nursing teachers selected by stratified random sampling and 271 final year nursing students were involved and data collected using structured knowledge questionnaire and station checklist and four point rating scale. The result shows 66.7% of them had adequate knowledge after intervention which was highly significant at the level of less than 0.001[3]

Conclusion

The study was aimed to assess the effect of stimulation (OSCE) based clinical skill education on knowledge and skill in performing intramuscular injection among under graduate nursing students. The findings of the study revealed that there is an increase in knowledge and skill of undergraduate nursing students regarding intramuscular injection after the simulation based clinical skill education. The analysis showed that pre-test and post-test knowledge and skill were highly statistically significant at the 0.0001 and level of significance <0.05 respectively. Thus the study result proved that teaching was effective as there was significant improvement in the knowledge and skill of nursing students regarding intramuscular injection after the implementation of simulation based clinical skill education. The study clearly depicts that continuing nursing education and in-service education plays a significant role in improving and updating the knowledge of undergraduate nursing students as the nursing students will get an opportunity to improve their skill and practices.

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A STUDY ON PEOPLE'S AWARENESS ON FARMER'S PROTEST AND FARM BILL 2020

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Abstract

This paper is a comprehensive study of the people's understanding, viewpoint and expectations regarding farmer's protest – the Delhi Chalo farmer's protest at the border which is continuing till today from November 26, 2020. The protest which emerged as a response to the Indian agriculture acts of 2020, more commonly known as the Farm Bills, which is the combination of three acts initiated by the Parliament of India in September 2020, is turning out to be the largest and longest peaceful citizen's protest all over the world. It received world-wide attention and support. It is in this context that the awareness of the people of Kottayam district about the farmer's protest and its causing factors are looked up on. The study revealed that the society is aware about the protest and is in solidarity with the protesting farmers. Indian economy is going to get badly affected by the protest and is going to witness the long-term consequences of the protest. The process of passing the bill has to be revisited and the will of the farmers and states must be taken into consideration by the government.

Keywords: *Farmer's Protest, Farm Bill 2020, Minimum Support Price (MSP), Agricultural Produce Market Committee (APMC)*

Introduction

Industry and technology are playing an important role in Indian economy nowadays, but the contribution of agriculture in the development of Indian economy cannot be neglected. Internal trade of food-grains and other agricultural products results in the expansion of service sector. Agriculture supplies raw materials to various industries. The development of agro-based industries and food processing industries are entirely dependent on agriculture. Therefore, agriculture and hence the farmers are the back-bone of Indian economy. Hence it is the responsibility of the society as a whole

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to be concerned about the farmers, aware about their issues and to stand by their side.

Today everyone is obsessed with the so-called white-collar jobs. It is not a trend that started recently. It has been the trend from many decades ago. But it has got prevalent and strengthened in these days so that the society regards everything else including farming and the ones who does it - the farmers with contempt. It is really heart breaking to see that the one who toil in the soil to feed each one of us is getting marginalised and kept aside from the main stream of the society.

Income from farming is shrinking day by day. Their life is always miserable. They were never provided with what they deserved. Drought and recent floods and cyclone added their miseries. It is in this scenario that Farm Bills came into existence. The Indian agriculture acts of 2020, more commonly known as the Farm Bills are the combination of three acts initiated by the Parliament of India in September 2020. The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Bill, 2020, The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Bill 2020 and The Essential Commodities (Amendment) Bill 2020 are the three bills constituting the Farm Bill 2020.

Right after the proposal of these laws, different protests have come underway in different states of India. The historic farmers' struggle at Delhi's doorsteps and elsewhere in the country has completed more than 100 days from the time it get launched. It is turning out to be the largest and longest peaceful citizen's protest all over the world. It received world-wide attention and support. It is in this context that the awareness of the people around us about the farmer's protest and its causing factors are looked up on.

The study on people's awareness on farmer's protest and Farm Bill 2020 was restricted among the people of Kottayam district. Kottayam is known as the Land of Letters. It is known for its contribution to print media and literature. It is also known for its high literacy rate. Along with the highest literacy rate Kottayam has other reasons to be get selected for a study on farmer's protest and Farm Bill; agriculture forms the livelihood of the majority in the district. Many farmers in the district have lost their cultivation for three consecutive years. So the hardships of a farmer is pretty clear to the people of the district. In short, the people of the district are supposed to be aware about the farmer's protest at the border which is continuing till today from November 26, 2020. The study is not confined to the farmers of the district: the respondents to the survey comprises of all categories of people – school students, college students, employees, unemployed, retired employees and of course the farmers too.

The 'Delhi Chalo' farmer's protest at the border is continuing till today from November 26, 2020. Protesting farmers consider the laws as a key to an exploitative regime that would ultimately lead to the loss of their lands. Farmer unions in Punjab and Haryana say the laws enacted at the Centre will dismantle the minimum support price (MSP) system. Over time big corporate houses will dictate terms, Agricultural Produce Market Committee (APMC) will be no longer retained by the government and farmers will end up getting less for their crops, they argue. Farmers fear that with the virtual disbanding of the mandi system,

they will not get an assured price for their crops.

Review of Literature

Sudha Narayanan (2021) The study titled "Understanding Farmer Protests in India" identified that India's agricultural sector is shaken by massive farmers' protests against the farm bill passed by the Indian government. It examined the grounds of the farmer's fears and showed the way toward a more democratic path of reform that would be sensitive to the concerns, needs and vulnerabilities of India's smallholders and landless agricultural workers.

Kamaljit K Sangha (2021) The study titled "The biggest peaceful protest against corporations in human history - Daring farmers of India" identified that the current crisis in Indian agriculture warrants solutions, but in consultation with farmers and related institutions; unlike the imposition of Farming Reforming Bills passed by the Indian Government. It also observed that the passing of the bills has caused frustration among millions of farmers, farmworkers, and the general public since September 2020, and the government fails to understand farmers' perspective - agriculture is their heritage, not a business. According to this study the main reason for the Acts is that the policymakers within the government fail to understand the true value of agricultural economy in villages which are the foundation of India, and instead preferred to liaise with corporations for business gains while compromising the needs of millions of people.

Kirpen Dhaliwal (2020) The study titled **"**Critical Analysis on the Farmer Bills, 2020" observed that the Farmer Bills which seem promising on paper stating that it gives farmers the freedom to sell to any buyers outside the APMC premises; enter into contracts with buyers directly and lifts restrictions on stock limits to incentivise private investment in agriculture however, but doesn't acknowledge the practical difficulties associated with the proposed set up.

Need and Significance

Farmers continue to stand their ground at border points in the country. It is the largest protest in world history: a multi-faith, multi-caste, multi-generational movement being led by over 100,000 Indian farmers. The Delhi Chalo peaceful protests have sparked others to take place across India and other countries, with a majority of Punjabi and Sikh farmers leading the charge on the ground locally and abroad to raise awareness about the issue.

Many protestors by the Delhi border points are from the states of Punjab and Haryana, which are considered India's bread basket. The unwavering farmer's protests represent a symbolic fight towards salvaging their depleting livelihoods. Conscious and responsible citizens are supposed to be aware about the protest, its reasons, consequences and are expected to be in solidarity with the protesting farmers.

Objectives

- To identify whether people of Kottayam district are aware about the farmers protest and the reason behind it.
- To determine whether the people are in solidarity with the protesting farmers
- To study the people's understanding, viewpoint and expectations regarding farmer's protest.
- To study how deep is the awareness of people about Farm Bill 2020.

- To identify the attitude of people towards government in the process of passing of laws.

The present study is basically an empirical one where both primary and secondary data have been used. For primary data, fifty (50) respondents were randomly selected from the Kottayam district. For collecting data, questionnaire method was used. In the present context of COVID-19 pandemic since it is risky to collect the data directly from the respondents, google form is prepared out of the questionnaire and made it available to the respondents. The respondents fall in different categories – school students, college students, employees, unemployed, retired employees and farmers. Secondary data were collected mainly from articles and newspapers. A total number of 50 samples have been selected for the purpose of this study. The study covers a period 07/04/2021 to 17/04/2021 and the relevant information was obtained.

Findings and Implications of the Study

- The people have at least heard about the ongoing Farmer's Protest
- Only a few people are ignorant of the actual reason behind the protest
- The society is in solidarity with the protesting farmers and are not supporting the Farm Bill
- Among the supporters of the Farm Bill there are few who didn't have an overall understanding about Farm Bill
- The process of passing the bills was not democratic
- It is the responsibility of the government to take the will of the farmers and also of the states before passing such laws
- The protest will have long term consequences and negative impact on Indian Economy
- Not all are expecting a resolution in favour of the protesting farmers from the government side.

Conclusion

The farmers are protesting for a much-needed positive resolution from the government side. The survey made it clear that all are aware that a protest is going on at the capital by the farmers. Though it appears like society is least concerned and bothered about farmers protest, majority of the respondents of the survey stated that they are in solidarity with the protesting farmers and most of them are of the opinion that the ongoing farmers protest will have long term consequences and negative impact on Indian economy. The process of passing the bill has to be revisited and the will of the farmers and states must be taken into consideration by the government.

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PLAY AS A TOOL FOR EFFECTIVE ACADEMIC PERFORMANCE IN CHILDHOOD EDUCATION

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Abstract

This paper discusses the importance of play as it relates to pupils academic performance. It looks at pupils' interest in play which invariably enhances their learning outcomes. Furthermore, the paper examines the availability of functional play facilities, playing environment as they have the possibility of affecting pupils' development and the significance of play in the life of school pupils. It also discusses reduced child-driven play and the potential repercussions. Based on this, it was concluded that play is a cherished part of childhood that offers children important developmental benefits and the opportunity to fully engage with other children. It was recommended among other things that: Schools should endeavour to create a conducive playing environment in order to enhance pupil academic performance and Parents should not relent in their efforts in providing the necessary play learning materials for their wards as this will spur them up to study harder.

Keywords*: Play, Academic Performance, Childhood, Play facilities and Environment.*

Introduction

Play is essential to pupils' development. This is because it contributes to the cognitive, physical, social, and emotional well-being of children and youths. Play also offers an ideal opportunity for parents, teachers to engage fully with their children. When children begin to develop this awareness they gain control very early in life. Through play, important individual differences are quickly established which may have long-lasting results for attainment and well-being. These abilities are learnt, through various types of play which form a powerful context for their language development.

Play is a natural, practical and real activity that involves the head, heart and hands. Whenever a child plays, he learns one or two things and such experience is hard to erase. This is because when children play, they engage at least four (4) out of the

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five (5) senses. Play is multifaceted, and its complexity lies in the many different ways in which children play. It is also a natural part of a child's life, with many opportunities to engage in play and work together with peers (Whitebread, 2011). The significant contribution of play to young children's language development and academic performance is well documented in child psychology, anthropology, sociology, and in the theoretical frameworks of education, recreation, and communications (Frost, 2010). Play is important for the child's development and learning. Conscious use of play to promote the development and learning of each individual child should be an omnipresent activity in the pre-school. Play and enjoyment in learning in all its various forms stimulates the imagination, insight, communication, and the ability to co-operate and solve problems. Through creative and imaginary games, the child will get opportunities to express and work through their experiences and feelings(Smith, 2015).

In educational system, children increasingly gain unfamiliar knowledge and skills through play. Across cultures, children model substantial aspects of their play on adults' activities and in so doing learn not only social roles and cultural values and norms but also how to interact with peers and control their emotions. Typically in the culture, play culture pastimes of children through games, songs and other play activities are transmitted from one generation to another (McElwan,2015). On the other hand culture benefits ultimately from the play engendered creativity that prepares future generations of citizens for innovative problem solving and view contribution to society. In Nigeria, the role of play in young children learning of traditional games where play helps in the development of physical agility, concepts and cultural, language development and social learning (Sedite, 2009). So, it is important to find a way to help teachers and learners to overcome this problem. Therefore, this study attempts to focus on play as a tool for effective academic performance in childhood education.

Pupils' interest in playing in relation to effective academic performance

Interest is an important variable in learning because when one becomes interested in an activity, one is likely to be more deeply involved in that activity (learning). It is a subjective feeling of concentration or persisting tendency to pay attention and enjoy some activities or contents (learning contexts). It is a source of motivation which derives students to learn (Jeffrey, 2007). Interest is often thought of as a process that contributes to learning and academic achievement. That is, being interested in a topic is a mental resource that enhances learning, which then leads to better performance and achievement (Hidi, 2009). Indeed, research has demonstrated that both situational and individual interest promote attention, recall, task persistence, and effort (Ainley, 2018). Play determines the academic achievements of pupils to a great extent. Both concept mapping strategies and academic achievements are interrelated and dependent on each other. For example during play, the brain cells are properly connected. When there is consistent and persistent play during learning the experience gets strengthened and there is perfection. If there is no consistent play or learning the experience remains faint. If pupils are not encouraged to play or engage in any activities the brain cells are not connected and developed and

that may leads to extinction or death of those cells.

According to Obe (2010), pupils' who are motivated to learn through play tend to study happily frequently and more efficiently. Thus, play helps to promote pupils' understanding. However, Gallinore (2015) found that interest of students toward any subject could affect students' academic performance positively or negatively. Foss (2016) also found that interests aroused through play influence how well pupils' adjust and how they behave. According to Akintoge and Shotuu (2012) students' performance is related to the formation of interest toward learning, hence poor attitude to any subject prior to learning will lead to poor performance. Similarly, Hurlock (2008) stated that interests are source of motivation which drives people to what they want to do when they are free to choose. A person can only be interested in something when he/she sees that such a thing will be of benefit to him. Interest provides in pupils strong motivation to learn (Ibok, 2016). This is because interest can be stimulated through play.

Play can be used to develop students' capacity to learn independently. According to Ajaja (2009), play way is a strategy that pupils' find useful in understanding complex ideas and clarifying ambiguous relationships. It serves as a strategy to help learners organize their cognitive frameworks into more powerful integrated patterns. Some examples are teaching using rhymes such as: 1 is for father, the head of the home, 2 is for mother, who put me on her back, 3 is for grandpa, who told me nice stories, 4 is for grandma, who gave me many groundnut and 5 is for me, the baby of the home. This one rhyme can also be used to teach counting numbers, ordering of numbers, extended and nuclear members of the family and duties of the members of the family.

Availability of functional play facilities for effective academic performance

Availability of functional playing facilities according to lbok(2016) has proved as essential instruments that facilitate pupils learning habits. Availability and proper utilization of instructional materials have a close tie in fostering pupils' learning (Adele, 2015). The nature, condition, adequacy of play facilities, and relevance of learning materials definitely have impact on learning engagement and pupils' academic performance(Marcus, 2016). A study by Umoh (2010) found that such characteristics as well as equipped laboratories and libraries for learning were relatively important in improving pupils' academic performance.

Inyang-Abia and Esu(2004) posited that learning materials are used by the learners and the teachers to facilitate the acquisition of knowledge and skills in the teaching and learning process. It is important to recognize that, when play facilities are available and utilized, pupils learn better and acquire skills that will help them function adequately in the classroom. Afangideh (2009) also stated that, availability of functional playing facilities offers reality of experience, provides visual aspects to a process or technique, facilitates the understanding of abstract concepts, save time by limiting the use of wordy explanations and provides opportunity for the learners to manipulate objects in the environment.

Umoren (2008) maintained that adequate and quality of learning materials are basic ingredients for quality education

and to achieve the intended goal of the school programme, hence, enhances pupils' learning. According to Ajaja(2006), functional facilities for playing strengthened the idea by emphasizing that learning is complete activity that requires pupils' and teachers' motivation, adequate learning facilities to promote students' learning habits. The finding of the study conducted by Esu (2003) on utilization of instructional materials and students' academic materials allow students to have relatively uniform attention and opportunities to practice acquired skills. According to Okoro and Iyeke (2014), the availability of learning materials is important for effective execution of any assigned task. They also maintained that, the availability of learning materials is equally essential to achieve desirable results. Functional facilities for playing induce learners to engage in self directed learning experiences through activities which help to express their interest, aptitude and abilities, thus enhance pupils' learning habits.

Uruakpa (2010) asserted that teachers must utilize appropriate instructional materials, techniques, and methods to ensure that learning actually occur and the objectives of learning are attained. In this submission, Ofoegbu(2017) posited that teaching and learning resources facilitate the achievement of the goal of education. He also affirmed that learning materials determine the extent to which instructional objectives are achieved and enhances students' learning habits. Since play has a unique and important role in promoting the physical, emotional, and social well-being of children and adolescents, it is important that they promote strategies that will support children to be resilient and to reduce excessive stressors in their lives.

Playing environment for effective academic performance

Play environment is the atmosphere, which composed of various factors that affect the individual learning (Eze, 2012). Play environment is believed to have a significant influence on pupils' academic performance (Lopz, 2012). Educational goals are bound to elude the nation if a learning environment is not created, utilized and sustained. A conducive learning or play environment, besides exquisite background of the learners, nurtured and utilized by erudite teachers invigorate respective organs of cognitive, affective and psychomotor domains. Thus, given sound teachers in a sound classroom environment, with learners learning in a conducive classroom environment, it is expected that the academic achievement of the pupils would be above average (Ukashia, 2010). On the other, poor playing or learning environment with crowded population, poor learning facilities, lack of sitting accommodation, lack of instructional materials and many others may likely affect students' learning habits.

Play environment can affect pupils' comfort and also their ability to learn to some extent. Pupils who are comfortable are likely to get much information as compared to those who are uncomfortable. Besides, the physical atmosphere can also affect the morale of the learners. Unfavorable learning environment can discourage the learners and they become less willing to learn (Fisher, 2008).

According to Okechukwu (2013), physical environment refers to the physical characteristics of the classroom. Physical classroom environment is a combination of different things including lighting,

temperature, ventilation system, classroom size and floor, walls. Teachers and students are considered as the main elements of the learning environment.

Favourable environment has a significant positive effect on students' learning habits (Imo, 2015). Good learning environment plays a central role in any learning activities and makes it more conducive, successful and achievable (Uni, 2007). A favourable environment is the key to positive healthy mental development (Umoh, 2010). According to Adele (2015), the intellectual and moral development of every child is influenced by both hereditary and physical classroom environment.

According to Ibok (2016), the environment in which the child finds himself and constantly interacts is virtually responsible for the scope of his success or the limit of educational progress. This is also capable of influencing his behaviour either to desirable standard or unhealthy tendencies especially as it relates to his learning ability, interest and readiness (Okon, 2018). Play is integral to the academic environment. It ensures that the school setting attends to the social and emotional development of children as well as their cognitive development. It has been shown to help children adjust to the school setting and even to enhance children's learning readiness, learning behaviors, and problem-solving skills. Social-emotional learning is best integrated with academic learning; it is concerning if some of the forces that enhance children's ability to learn are elevated at the expense of others. Play and unscheduled time that allow for peer interactions are important components of social-emotional learning

The benefits of play

Play has many benefits to the child as it helps the child in all round development. It allows children to use their creativity while developing their imagination, dexterity, and physical, cognitive, and emotional strength. Play is important to healthy brain development. It is through play that children at a very early age engage and interact in the world around them. Furthermore, Play allows children to create and explore a world they can master, conquering their fears while practicing adult roles, sometimes in conjunction with other children or adult caregivers. As they master their world, play helps children develop new competencies that lead to enhanced confidence and the resiliency they will need to face future challenges.

Leadership skills are development and sustained through play. Decision making which involves critical thinking, problem solving and collaboration is encouraged. Play leads to holistic or all around development of an individual. Undirected play allows children to learn how to work in groups, to share, to negotiate, to resolve conflicts, and to learn self-advocacy skills. When play is allowed to be child driven, children practice decision-making skills, move at their own pace, discover their own areas of interest, and ultimately engage fully in the passions they wish to pursue. **(**Akintoge & Shotuu2002)

Ideally, much of play involves adults, but when play is controlled by adults, children acquiesce to adult rules and concerns and lose some of the benefits play offers them, particularly in developing creativity, leadership, and group skills. In contrast to passive entertainment, play builds active, healthy bodies. In fact, it has been suggested that encouraging unstructured play may be an exceptional way to increase physical activity levels in children, which is one important strategy

in the resolution of the obesity epidemic. Perhaps above all, play is a simple joy that is a cherished part of childhood. (Ainley, 2018)

Children's developmental trajectory is critically mediated by appropriate, affective relationships with loving and consistent caregivers as they relate to children through play.When parents observe their children in play or join with them in child-driven play, they are given a unique opportunity to see the world from their child's vantage point as the child navigates a world perfectly created just to fit his or her needs. (The word "parent" is used in this report to represent the wide range of adult caregivers who raise children.) The interactions that occur through play tell children that parents are fully paying attention to them and help to build enduring relationships.

Parents who have the opportunity to glimpse into their children's world learn to communicate more effectively with their children and are given another setting to offer gentle, nurturing guidance. Less verbal children may be able to express their views, experiences, and even frustrations through play, allowing their parents an opportunity to gain a fuller understanding of their perspective. Quite simply, play offers parents a wonderful opportunity to engage fully with their children. (Akintoge &Shotuu, 2002)

Reduced child-driven play and the potential repercussions

Despite the numerous benefits derived from play for both children and parents, time for free play has been markedly reduced for some children. This trend has even affected kindergarten children, who have had free play reduced in their schedules to make room for more academics. Currently, many schoolchildren are given less free time and fewer physical outlets at school; many school districts responded to the No Child Left Behind Act of 2001 by reducing time committed to recess, the creative arts, and even physical education in an effort to focus on reading and mathematics. This change may have implications on children's ability to store new information, because children's cognitive capacity is enhanced by a clear-cut and significant change in activity. A change in academic instruction or class topic does not offer this clear-cut change in cognitive effort and certainly does not offer a physical release. Even a formal structured physical education class may not offer the same benefit as free-play recess. Reduced time for physical activity may be contributing to the discordant academic abilities between boys and girls, because schools that promote sedentary styles of learning become a more difficult environment for boys to navigate successfully (Coolahan & Fantuzzo, 2016).

Some children are given less time for free exploratory play as they are hurried to adapt into adult roles and prepare for their future at earlier ages. Parents are receiving carefully marketed messages that good parents expose their children to every opportunity to excel, buy a plethora of enrichment tools, and ensure their children participate in a wide variety of activities. Children are exposed to enrichment videos and computer programs from early infancy as well as specialized books and toys designed to ensure that they are well-rounded and adequately stimulated for excelled development. Specialized gyms and enrichment programs designed for children exist in many communities, and there is an abundance of after-school enrichment activities (Tsao, 2015). These tools and programs are heavily marketed, and many parents have grown to believe

that they are a requirement of good parenting and a necessity for appropriate development (Adele, 2015). As a result, much of parent-child time is spent arranging special activities or transporting children between those activities. In addition to time, considerable family financial resources are being invested to ensure that the children have what are marketed as the "very best" opportunities (Ajaja, 2009:286)

It is clear that organized activities have a developmental benefit for children, especially in contrast to completely unsupervised time. Some research substantiates that for most children, benefits increase with higher levels of participation. In addition, it has been suggested that because this lifestyle is associated with middle-class families, it may have a benefit in maintaining social class or in creating upward mobility. It is less clear; however, at what point a young person may be "overscheduled" to their developmental detriment or emotional distress (Ajaja, 2009:286). Free child-driven play known to benefit children is decreased, and the downtime that allows parents and children some of the most productive time for interaction is at a premium when schedules become highly packed with adult-supervised or adult-driven activities.lt is left to parents to judge appropriate levels of involvement, but many parents seem to feel as though they are running on a treadmill to keep up yet dare not slow their pace for fear their children will fall behind. In addition, some worry they will not be acting as proper parents if they do not participate in this hurried lifestyle (Ajaja, 2009).

Conclusion

Play is a cherished part of childhood that offers children important developmental benefits and the opportunity to fully engage with other children. However, multiple forces are interacting to effectively reduce many children's ability to reap the benefits of play. As we strive to create the optimal developmental milieu for children, it remains imperative that play should be included along with academic and social-enrichment opportunities and that safe environment should be made available to all children. Additional research is needed to explore the appropriate balance of play, academic enrichment, and organized activities for children with different temperaments and social, emotional, intellectual, and environmental needs.

Recommendations

Based on the foregoing, the following recommendations are made.

1. Schools should endeavour to create a conducive playing environment in order to enhance pupil academic performance
2. Both government and private school administrators should see to the need of making available adequate learning materials and functional playing facilities in order to encourage teaching-learning activities within the school system.
3. Parents should not relent in their efforts in providing the necessary play learning materials for their wards as this will spur them up to study harder.
4. Government and educational stakeholders should endeavour to provide study facilities like Libraries, laboratories, etc. so as to improve pupils' academic performance. Hence enhances pupils' academic performance.

5 Teacher can promote free play as a healthy, essential part of childhood. They should recommend that all children are afforded ample, unscheduled, independent, non-screen time to be creative, to reflect, and to decompress. They should emphasize that although parents can certainly monitor play for safety, a large proportion of play should be child driven rather than adult directed.

6. Counselors should emphasize the advantages of active play and discourage parents from the overuse of passive entertainment (e.g, television and computer games).

7. As parents choose child care and early education programs for their children, teachers can reinforce the importance of choosing settings that offer academic preparedness. They should be guided to also pay attention to whether the settings attend to the social and emotional developmental needs of the children.

8. Government can join with other child professionals and parents to advocate for educational settings that promote optimal academic, cognitive, physical, social, and emotional development for children and youths.

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GENERATIVE LEARNING MODEL AND SOFT SKILLS DEVELOPMENT IN THE CONTEXT OF SCIENCE LEARNING

Dr. Reshmi. K.S.*

Abstract

Generative Learning model (GLM) helps the learners to enhance their educational experience by actively connecting new ideas into their memory to get a better understanding of the instructed concepts. Students who use soft skills are able to master their studies more successfully, and complete their obligations smoothly. GLM consists of four phases: the preliminary phase, the focus phase, the challenge phase and the application phase. Some soft skills that could be developed through GLM are; Communication, Strategies, Team work and Leadership. In Science learning and softs skills development, the GLM is one of the best models that can be used in different classroom situations and levels.

Key Words: *Generative Learning Model, Soft Skills, Science Learning, etc.*

Introduction

Soft skills refer to the abilities required to interact amicably with others. Soft skills are defined in many ways and are called by many other names including transferable skills, transversal skills, people skills and 21st century skills (Abbot, 2014). Robles (2012) defined soft skills as "character traits, attitudes, and behaviors—rather than technical aptitudes or knowledge." It refers to the personal attributes or traits that make a person cordial and cooperative, enabling successful interaction and relationships with others.

Soft skills are important for students, both with regard to their studies as well as future careers. Students who recognize the importance of soft skills on time are able to master their studies more successfully, complete their student obligations smoothly, make more acquaintances that may prove useful in the future, and better present themselves to professors who can also play an important role in their future careers (Susilawati, Aznam, & Ngadimin, 2020). They become well-developed and balanced individuals with qualities and abilities expected from educated individuals.

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Importance of soft-skill based science learning

One of the goals of 21st century science education is to develop scientific literacy. The components of scientific literacy are scientific clarification, explaining phenomena scientifically, using scientific evidence and willingness to engage in science issues. These components produce skills related to soft skills including: communication skills, argumentation, critical decision making and problem solving. So, the soft skill-based learning becomes essential to improve students' soft skills. Students internalize soft skills only by utilising appropriate method and approach in schools. Therefore, it is necessary to identify methods of developing soft skills that have been applied by teachers, especially in science learning.

Soft skills in Science Learning

Science has a prominent role among school subjects and must be taught to all learners ranging from basic education to higher education because of its strategic role in human life. Society, directly or indirectly is affected by the developments in the field of science. Scientific knowledge changed the human attitude towards all the problems which he encounters. It develops logical reasoning and problem solving by applying the method of science. The teaching learning methods in the classroom should be inspiring and directed to the learners cognitive development along with their emotional, aesthetic, moral and spiritual aspects. By imparting soft skills training through science education, students will be able to handle interpersonal relationships better. They will develop a strong sense of empathy towards others and come up with well-informed perceptions about others' behaviour and thinking patterns. Some soft skills that could be developed through GLM are :

- Communications – verbal, written, active listening, netiquettes, body language
- Strategies – decision making, problem solving, critical thinking, creativity, ability to locate and use information
- Team work – collaboration, ability to operate effectively in a team environment
- Leadership – negotiation, compromise, conflict management, managing diversity and inclusion, cultural awareness, negotiation, delegation

The Generative Learning Model

The Generative Learning Model is appropriate in inculcating soft skills among students through science teaching. Generative Learning Theory, introduced by the American educational psychologist Wittrock (1974) was based on the idea of knowledge generation. The Generative Learning Theory is based on the idea that learners can actively integrate new ideas into their memory to enhance their educational experience. The basis of generative learning lies in the theories of Piaget (1926) who opines learning as a process of cognitive development involving assimilation of new experience to the existing schemas followed by the accommodation of existing schemas,

Learners enhance their educational experience by actively connecting new ideas into their memory to get a better understanding of the instructed concepts. The sustainable knowledge can be generated only through sense making which involves generation of relations and meaning by the learner. Thus learner is an active participant

in learning process, working to construct meaningful understanding of information found in the environment. When the learner actively seeks to make sense of the material presented to him, it results in generative activity which in turn leads to meaningful learning outcomes that enable the learners to transfer what he has learned to solve new problems. Wittrock (1974) suggested that new ideas must be integrated with preexisting mental schema. This schema may consists of (i) personal experience, (ii) previously acquired knowledge, and (iii) learner cognitions. Wittrock (1974) believed that the learners establish relationship between stimuli and the information they have stored in the memory. The process is referred to as 'generation'. The learning occurs when learner build connections between the presented material and their prior knowledge. Generative learning theory is based on the structure of knowledge and cognitive development and focuses on the learner. In his vision, generative learning from the text depends on what is presented and on learner's cognitive process during learning. The most essential and basic assumption of the model is that the learner does not passively receive information. Knowledge is constructed by the learner.

Based on the Generative Learning Theory, proposed by Wittrock, the Generative Learning Model was proposed by Osborne and Wittrock (1983) and summarized by Kyle, Abell & Shymansky (1989) has four phases.

1. Preliminary phase: In the preliminary stage, before beginning any formalized instruction, teachers assess students' ideas and conceptual explanations.
2. Focus phase: In the focus stage, the teacher provides experiences related to the particular concept that motivates the students to explore their level of conceptual understanding.
3. Challenge phase: In the challenge stage, the teacher helps students exchange points of view and challenges students to compare and contrast their ideas and support their view points with evidence.
4. Application phase: In the application stage, students use their newly refined conceptual understandings in familiar context.

Learning Science with Generative Learning Model (GLM)

According to Kyle, Abell & Shymansky (1989), GLM consists of four phases: the preliminary phase, the focus phase, the challenge phase and the application phase. At the preliminary phase, the students are motivated to learn and to express their previous knowledge regarding the topic. Then, at the focus phase, the students are given the opportunities to express their ideas about the concepts being studied. The students explore their level of conceptual understanding at this phase. Then at the challenge phase, cognitive conflict occurs. The students' views are inconsistent or mismatch the accepted new idea. So, the student compares his opinion with the opinion of his peers. Finally, at the application phase, students apply their initial concepts plus new concepts in unfamiliar situations. Thus, the students understand the discrepancies in their understanding and get ready to accept the more refined concept.

In the preliminary phase and focus phase, students are given chances to express their ideas within the group about the

concepts being studied. Then also express their ideas related to the concept going to study. The ideas possessed by one student may not match with those possessed by others, which will lead to dissatisfaction and cognitive conflict. It will increase their concern for their own ideas so that they will discuss the concept again and explain it in terms of existing knowledge.

In the challenge phase, the challenge before students is to explain new understanding on the basis of existing knowledge. It leads to cognitive conflict, reveals misconceptions, if any and even the students realise that their existing knowledge is insufficient or inefficient to explain the new knowledge. It results in restructuring their existing understanding, and results in the understanding of the new concept, which becomes steadier.

In the application phase, the conceptual understanding deepens. The students apply their newly acquired knowledge and understanding in new and unfamiliar situations. They get a chance to use, utilise and apply new knowledge or the newly developed correct concepts they have built.

In Generative Learning Model, the teachers elicit ideas from students through discussion, which occurs in the focus phase. The elicited idea is connected to the new knowledge followed by the construction of new, refined concepts. Generative Learning Model provides opportunities to construct knowledge actively, by considering misconceptions. By applying GLM, students learn better because there are activities like discussion, communication, questioning-between students and between students and teachers. GLM provides opportunities for students to express their ideas.

Learning Science and Soft skills using Generative Learning Model (GLM)

The Generative Learning Model is based on constructivism where students actively constructs knowledge. It involves active integration of new knowledge with the previous knowledge of the students. The new knowledge is applied for solving novel problems. If the new knowledge succeed in answering the problems encountered, then the new knowledge will be stored in the long term memory. GLM is based on how the brain works and how the humans learn. In GLM, the knowledge construction takes place only if learng is actively undertaken by the learner. The learner is not a passive recipient of knowledge, instead he actively constructs his own knowledge base. He is working to construct meaningful understanding of information found in the environment. Osborne and Wittrock (1985) stated that: Generative learning is a learning model that emphasizes on actively integrating new knowledge using the knowledge already possessed by previous knowledge of students. The new knowledge will be stored in the long term memory, and answering related issues or symptoms.

Discussion

Based on the Generative Learning Theory, proposed by Wittrock, the Generative Learning Model was proposed by Osborne and Wittrock (1983) and summarized by Kyle, Abell & Shymansky (1989) has four phases : Preliminary phase, Focus phase , Challenge phase, and Application pha*se.*

The first phase is the preliminary phase. The knowledge base, the ideas which the students possess, the conceptual explaination held by the students – all these

are assessed by the teacher. The students get ample opportunities for communicating their ideas, both with their peers and with the teacher. The knowledge of the prerequisite possessed by students provides teacher an awareness on the way to proceed and how to introduce the content to be presented newly. The teacher can provide opportunities for students to communicate their ideas freely. The students express the existing ideas they have, related to a topic. Teachers assess students' ideas and conceptual explanations. The teachers act as motivators by asking questions so that the students will reveal the ideas which exist in their minds. Knowledge of the initial conception will produce meaning and understanding of students in learning. This is supported by the theory of Gagne, that learning must be supported by instructional events, such as motivating students by communicating learning objectives, directing students' attention, generating transfers (generalization), encourage performance and provide feedback.

The second stage is the focus phase. The teacher provides experiences related to the particular concept that motivates the students to explore their level of conceptual understanding. For this, the students are given the opportunity to express their ideas on concepts that they already learned. Based on the student responses and ideas, the strategies which enables the learning to take place are developed. When students express an idea, they will realize that there is an opinion that is different from others on the topic being studied. These expressed ideas are anaysed and interpreted for further proceeding. Thus, in GLM, the strategy is formulated by knowing the learner. Expression of one's own idea different from that of others, will create conflicts within itself that cause dissatisfaction with ideas and opinion that will encourage students to make changes. This can be generated by raising of students' awareness of their own ideas; asking them to explain unsuitable concepts, and discussing those concepts. At this stage, students are also given the opportunity to explore their ideas in small group discussions to talk the concepts being studied. Team work is involved in this process.

The third stage is challenge phase. In this step, the teacher increase the cognitive conflict by preparing the conditions in which the student is asked to compare his opinion with the opinion of his peers, and strive to reveal the truth/excellence of his opinion. The accuracy of the statement put forward is tested at the challenge phase (Osborne and Wittrock: 1985). At this stage, the student realises the inadequacy of the knowledge he possess in explaining the new phenomena. At this stage, the existing ideas of students get refined or modified, students are expected to gain a better understanding of the concept. It is intended to have a desire to strengthen the structure of their understanding of new concepts, students are given challenging questions to arouse their courage in arguing and about the subject being studied.

The fourth stage is the application phase. In this step, students apply their initial concepts plus new concepts or the refined knowledge that they gain on new situations they encounter or solving new problems. Students are expected to reflect and assess the excellence of new ideas they develop. This provides an opportunity for students to develop their own problem-solving strategy.

Conclusion and Suggestion

Generative Learning Model, proposed by Osborne and Wittrock (1983) and summarized by Kyle, Abell & Shymansky (1989) has four phases: Preliminary phase, Focus phase, Challenge phase, and Application pha*se. Teachers can use GLM to improve conceptual understanding of scientific concepts.* The teachers must provide opportunities for students to express their ideas, undertake appropriate strategies by knowing the needs of learners, provide opportunities for teamwork and also, encourage students to take the responsibility of their own learning.

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