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Contents

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About the Journal

The Journal of Teacher Education and Research (formerly Ram-Eesh Journal of Education) is the official Journal of the Ram-Eesh Institute of Education, which was established in 1999 under the Rama-Eesh Charitable Trust, New Delhi. Its first issue was published in 2004. It is a half-yearly journal. The purpose of this Journal is to foster inter cultural communication among educators and teachers nationwide; encourage transactional collaborative efforts in research and development; and promote critical understanding of teacher education problems in a global perspective. The Journal is designed to reflect balanced representation of authors from different regions of the Country.

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Editorial

The present day scenario in education is very heartening. A new education policy is in the making. Universities and colleges are being graded at national level. Colleges are being granted autonomous status. Some universities are being funded to make them world class. Universities are preparing for on line degrees. Teacher platform is being developed for up gradation of teacher education.

Uttar Pradesh checked mass copying in secondary school exam and lakhs of students had to drop. Schools in Delhi are a lot better menace of fleecing parents by private schools is receiving attention of government. Research in education is getting some attention.

In this time of turbulence in Education we present to our readers some research studies which show new direction.

Dr. (Mrs) Fatemeh Tabatabaie, Mrs. Akram Jafarpour, Dr. Mojtaba Khajehazad and Mrs. Fariba Mahamed initiated study to select the appropriate strategies and methods to teach practical parasitology in master course. Lectures, student roles, questioning, problem solving were defined and used. On analysis of data significant differences in class and lab were detected and synchronized with students' growth in training in master's course in parasitology.

Sunita Kathuria attempts to study the usage of ICT resources for sensory disabled children in inclusive schools at secondary level. However, it was found that though high potential of ICT, its usage is still very limited and there seems to be lack of positive attitude.

Shahinur Akter, Sadia Afrin and Shaharior Rahman Razu attempts to assess the impact of teaching quality on students' satisfaction in tertiary education of Bangladesh. Findings reveal that most of the students were moderately satisfied in relation to class management. Teaching method clarity of concepts, teaching aids, assessment, etc. did not find any significant impact on students' satisfaction.

Anuradha Sethi in her study aims to find out the organizational commitment among schools teachers. It was found that the government and private school teachers were not significantly different in their organizational commitment. However, male and female teachers were significantly different. Female teachers were more organizationally committed.

Poonam Punia and Swati have examined the attitude of college and school teachers towards using new technology of teaching. The success revealed that most of the college and school teachers showed average favorable attitude towards use of technology of teaching.

Isha Gupta conducted a study about awareness of human rights among teachers of secondary schools. She found that majority of teachers had scarce knowledge of human rights and only 38% know about UNO's declaration of human rights. 73% teachers did not know about agencies for redressal of violation of human rights.

Anil K.R. and K.S. Sajan studied Psychological Resilience of secondary school teachers. Resilience is one's ability to successfully adapt to tasks in face of social disadvantage or highly adverse conditions. It was found that there were different levels of Psychological Resilience among teachers, but significant difference was found in male and female teachers.

Malvinder Ahuja conducted study to investigate the role of school management government and private in promoting life skills of secondary school students from Science, Commerce and Arts streams and found that in decision making skills government schools' students of different streams were higher as compared to their counter parts of private schools. In problem solving skills private school students were better than the government school students of different streams. In communication skills private school commerce stream students were better than the other stream students and from government secondary school students too and in critical thinking skills Science and Commerce students of government and private schools were equal and found better than the Arts students.

Hemant Bhatt compared the achievement motivation and family environment of senior secondary schools students of working and non working mothers. Significant difference is found in the family environment of working and non working mothers and also in achievement motivation.

K. Saravanan and Muthu Lakshami conducted study to find stress management level of arts and science college teachers. Teaching and Class management situations greatly enhance the stress among teachers. Stress can't be avoided but one can learn to manage it.

Contingency Teaching Based on the Teaching–Learning Strategies: Application of Lecture, Problem Solving and Problem-Based Learning in Graduate Parasitology

Akram Jafarpour[1], Mojtaba Khajehazad[2], Fariba Mahamed[3] and Fatemeh Tabatabaie[4]*

ABSTRACT

This study aimed to select the appropriate strategies and methods to teach theoretical and practical parasitology in the formal training phase of master course. Study population was 13 parasitology students nested in two master courses in Iran University of Medical Sciences. The course with eight members was selected by available sampling. Regarding expert's opinions, 18 syllabuses of parasitology curriculum were divided into three equivalent packages and assigned randomly to the teaching methods. All syllabuses were taught and tested (pre, post and usage) by a trained team, distinctly in class and lab. Operational definition of the methods confirmed lecturer/student roles. Lecture: presenting/questioning; problem solving (PS): presenting and designing a problem/solving the problem; problem-based learning (PBL): designing a problem/ learning and solving the problem. Data were analysed by prizm 5 software and Friedman, paired t-test, Wilcoxon and Mann–Whitney tests (CI=95%). In the class, lecture (5.5±0.267), PBL (5.375±0.596) and PS (4.375±0.461) ranked by pre–post differential score (concurrent learning). Also, lecture (4.929±0.0714), PBL (4.75±0.250) and PS (3.607±0.461) showed the same rank in the usage exam. In the lab, PBL (6.125±0.398), PS (5.25±0.453) and lecture (4.75±0.526) in the concurrent learning and PBL (3.178±0.323), PS (2.865±0.322) and lecture (2.5±0.271) in the usage exam were ordered. Significant differences between class and lab in overall usage exam, lecture and PBL were detected. Synchronised with student's growth in the training phase of parasitology master course: lecture, PS, PBL and then job internship are gradually recommended before starting research phase.

Keywords: Education, Lecture, Problem solving, Problem-based learning, Parasitology, Theoretical, Practical

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INTRODUCTION

Contingency principle of teaching methods has always been emphasised by educational science experts and scholars (Van de Pol *et al.*, 2009). Despite the fact, most of the existing studies have compared existing teaching methods absolutely and have reported the superiority of the new approach to the traditional method (Lim and Lew, 2012). This article offers simple framework based on the current performance of learners and their role in the learning process to select appropriate teaching methods for different educational situations. This framework that we call is a stepped pattern of teaching–learning strategies, in addition to helping teachers to select appropriate teaching methods for different educational situations, allowing better analysis of previous studies and to provide contrary evidences from the comparison of teaching methods. Dreyfus proposed a five-stage model of skill acquisition which includes novice, beginner, competent, proficient and expert. The researchers inspired by this model offered a six-step model for clinical skills involved novice, advanced beginner, competent, proficient, expert and master(Al-Drees *et al.*, 2015; Dreyfus, 2004; Sangestani and Khatiban, 2013). In the following stepped pattern, the teaching–learning strategies with the reform of two proposed methods and references to the principles of philosophy and educational psychology, as the theoretical framework of the study, are described.

THE FIRST STRATEGY: CONTENT BASED

In the first learning–teaching strategy based on the principles of the essentialism philosophy, the aim is to transfer knowledge to learners and the learning process has received little attention. Teachers play a major role in transferring knowledge, and the responsibility of students is limited up to questions and answers for better learning. Data-processing techniques in educational psychology and lecture teaching methods, concept mapping, Socratic discussion, debate and any other methods in which the concepts and basics are transmitted by teacher to the novice learners are included in this teaching–learning strategies (Bicer, 2013; Carraccio *et al.*, 2008; Erkilic, 2008).

THE SECOND STRATEGY: EXERCISE BASED

The second teaching–learning strategy is more consistent with the perennialism teachings of philosophy and with behaviourism in educational psychology. In this generation, though master still has a major role in the provision and transmission of knowledge, after teaching students should actively apply knowledge to solve a problem, whether real or simulated. In general, behavioural family teaching models and problem-solving teaching methods, simulation, experimental teaching, teaching in the clinical skills centre and any other methods that after teaching prescribed appropriate exercise to beginner, learner are included in this strategy (Bicer, 2013; Coburn and Malek, 2012).

THIRD STRATEGY: INQUIRY BASED

The third teaching–learning strategy is consistent with the progressivism school in philosophy and cognitive theory in educational psychology and knows the learning as a production process

by each learner. Master is not more a transmitter of knowledge, but rather he plays a role as a guide, advisor and learning motivator. Learning stimulating is carried out by designing a relevant issue to the considered knowledge and students in the learning process by scientifically experiencing the relevant fact. In problem-based learning, discovery learning, seminars and any other manner, students, as advanced learners, should find and learning-related knowledge to the designed issue by an instructor, including teaching methods in the teaching–learning strategy (Chennault, 2013; Lemanski *et al.*, 2011).

THE FOURTH STRATEGY: WORK BASED

This strategy is based on pragmatism school of philosophy and social cognitive theories in educational psychology. Dealing with the real issues in a real-work environment causes students will to dominate on the required theoretical foundations in complex environments. Supervision and guidance of teachers is ongoing, but the role and responsibilities in a real environment convert students into a master learner. Practice-based learning, apprenticeships and trainings are located in this teaching–learning strategy (Lemanski *et al.*, 2011; Prince and Felder, 2006).

THE FIFTH STRATEGY: RESEARCH BASED

The fifth teaching–learning strategy is the border between objectivity and constructivism in philosophy and the distance between convergence and divergence in educational psychology. This strategy is used in situations in which there is no solid knowledge; so, the modern knowledge is created and acquired on the border between existing objectivity and comprehensive mental hypothesis. In the third and fourth strategies, teacher knew the answer but allowed the learner to acquire by scientific method – the considered objective response. But here, professor does not know the answer and can only help learner to coping properly with the scientific method of problem solving. Projects and theses are in this strategy. The product of interaction between mental attitude and objective skills and knowledge in a research project is a competent learner (Healey, 2005; Spronken-Smith, 2012).

THE SIXTH STRATEGY: COMPETENCY BASED

This strategy recognised the independence of learners in the subject, content and scientific method of knowledge acquisition and problem solving based on the constructivism and existentialist philosophy teachings and patterns of individual teaching–learning in educational psychology. When learner competency in terms of content and academic in a field or fields is proven, then competency-based teaching–learning strategies allow him to be able to organise, execute and report his learning opportunities and experiences according to the needs, interests, time and place of his desire. Masters remind the learning objectives or offer new learning opportunities. A competent learner can pursue his comments and special technique based on scientific evidence even if it is in conflict with the professors. This strategy is applied in specialised training for proficient education. Self-directed learning, evidence-based action and portfolio are among the teaching–learning methods in this strategy (Spronken-Smith, 2012).

THE SEVENTH STRATEGY: EXPERTISE BASED

This strategy is consistent with the phenomenology school in philosophy and metacognition theory in educational psychology. When the learner grasps professional competence in a specialised field in addition to academic qualifications, it can enhance their capabilities and improve their performance by using expertise-based learning strategies. Recognising and acting on the basis of mental pattern versus recognising and acting on the basis of the analysis is a major difference in the performance of an expert with a professional person. Accelerating the transition from analysis to model is the special function of this learning–teaching strategy. Mental pattern is constantly evolving as a proprietary product of individual-lived experience and learning has no end. The application of this strategy is in continuous professional development. Expertise-based training, mental model feedback and cognitive task analysis are among these strategies. Stepwise pattern of teaching–learning strategies in addition to its compatibility with the course of the development of philosophical principles and theories of educational psychology, in an overview, will cover all educational stages from novice to expert learner according to a learner role in learning. Thus, not only teaching–learning strategies and methods but also the infrastructure of philosophical and psychological bases are not defined in opposition to each other unlike conventional habits, but rather they're a continuum synergised which are used due to the learner position. Also the stepwise pattern of teaching–learning strategies by the increase of novice's knowledge and skills in a new field of scientific, their responsibility for own learning will increase. Higher level strategies help students to learn and behave more independently under more realistic and more sophisticated situation. The higher levels of strategies and teaching methods are gradually more individual, more efficient and require more cost, time and teaching skills. Teaching strategy appropriateness with the degree and position of learners is the main factor in choosing of teaching methods. Monitoring the process of gradual growth of learners in a science field is essential to apply a higher level of teaching–learning strategies. This approach has been made monistic, hierarchical and based on the gradual development process of learners for teaching–learning strategies inspired by the principles of being hierarchical unity, the existence and science authenticity, the union of knower and the known and the substantial movement in transcendental philosophy. In this philosophy also, other levels of teaching–learning strategies are discussed that are generally not covered in this article (Fahrenfort and Lamme, 2012; Zaidi and Nasir, 2015). The present study in accordance with the theoretical framework due to the research statistical population (master students of parasitology educational stage) examined three lecture, problem solving and problem-based learning on behalf of the three teaching–learning strategies.

METHODS

This study is a quasi-experimental study by using single group repeated measures design. Research ethics approval has been issued by the research ethics committee, the research deputy of Iran Medical Sciences University. The study population consisted of 13 students of

two educational courses of parasitology mastering from the University of Medical Sciences in Iran (five of first semester and eight of third semester). Due to the difference between courses and teachers in the two periods who had been deprived, the ability to control the variables to compare teaching methods, the single group study during the eight-member students was the best option. The procedures of this study were also approved by the Ethical Committee of the Faculty of Medicine (Iran University of Medical Sciences, IR.FMD.REC. 9311554006).According to expert opinion, 18 syllabus of parasitology in three equivalent packages (in terms of difficulty, duration of teaching, the gap between teaching and test) were randomly allocated to teaching methods (Table 1).

Table 1: Different combinations learning environment and teaching methods

Syllabus/Learning Environment	Class	Laboratory
Syllabus 1–18	Lecture	Lecture
Syllabus 2–17	Problem solving	Problem solving
Syllabus 3–16	Problem-based learning	Problem-based learning
Syllabus 4–15	Lecture	Problem solving
Syllabus 5–14	Problem solving	Lecture
Syllabus 6–13	Problem-based learning	Problem solving
Syllabus 7–12	Lecture	Problem-based learning
Syllabus 8–11	Problem-based learning	Lecture
Syllabus 9–10	Problem solving	Problem-based learning

As shown in Table 1 in the class, each teaching methods in six syllabuses of different times in a semester were taught and assessed. The same was done in the lab with a different chronological order so that the combination of theoretical and practical complement teaching methods of the curriculum syllabus in the classroom and in the lab was significant and analysable. A total of nine different combinations of teaching methods in both classroom and laboratory training environment were used (any combination was used in two syllabus). Thus, it was possible to analyse both classroom and lab results separately and combinatory. Operational definition of teaching methods was based on the seven teaching–learning strategies in the theoretical framework of the study. In the classroom, lecture teaching includes presentation by the professor and the students' questions and answers. Problem-solving method includes providing a lesson by the teacher and then solves a related problem by students. Problem-based teaching includes offering a problem by professors and acquisition of related knowledge and problem solving by students. In the laboratory, teaching with the lecture method contains theoretical explanation and carries out the process by the professor and observation and questions and answers by students. Teaching through problem solving also includes theoretical explanation process by the professor and carrying out the process by students. Problem-based teaching

method also includes determining the problem by teachers and acquisition of knowledge and carrying out the process by students. All topics by a team of trained teachers taught and tested in the classroom and laboratory (pre, post and usage). Pre- and post-tests were done distinctly in each tutoring theoretical session with two equivalent copies that are randomly assigned to pre-and post-test and each contains three multiple-choice questions. In each laboratories session, two equivalent prescriptions were used as pre- and post-test each of which consists of three multiple choice process questions. Thus, for each 8 students, 18 couples of data at theoretical courses (each teaching method with 6 couples) and 18 couples of data in the practical courses were obtained. The usage test for theoretical discussions contains six equivalent anatomical questions at the level of application or higher level of Bloom's taxonomy for the knowledge domain that every two questions evaluated the topics which were taught by one of the teaching methods of the study. The usage test of practical lessons include eight equivalent question at the level of independent performance of process in Bloom's taxonomy for skill domain that was done by the objective structured practical examination method (OSPE). Two questions were devoted to the presented syllabus in the lecture method and three of them were devoted to each of problem solving and problem-based learning methods. The average and standard deviation of total difference between the post- and pre-test scores of students in each syllabus of teaching methods were counted as 'concurrent learning' of that teaching methods. Also average and standard deviation of usage test results of any teaching method were calculated. Parameters such as 'concurrent learning' and 'application' for each teaching methods were separately analysed in the classroom (theoretical units) and at the library (practical units) and was compared with other teaching methods by Friedman test. The performance of teaching methods in the classroom and laboratory were compared by paired t-test or Wilcoxon methods. Also, independence of the results from gender variable was analysed by Mann–Whitney test. All tests were performed with the prizm5 software in the reliability range of 95%. Voluntary and informed participation of the students in addition to the ethical aspects is necessary for the success of the project. All syllabuses were done for all students by equally complying with educational laws and regulations. The student attitude towards efficiency of teaching methods in practical and theoretical courses were taken to compare the knowledge, skills and attitude of students and provide analysis results (Frank *et al.*, 2010; Zaidi and Nasir, 2015).

RESULTS

Difference between Pre- and Post-Test (Concurrent Learning) in the Classroom and the Laboratory

According to Table 2 in the 'concurrent learning' variable in the classroom, respectively, methods of lectures, problem based and problem solving had better performance. So that the average of total difference between the pre- and post-test in lectures and problem-based teaching methods was more than one score higher than the teaching method of problem solving, and Friedman test confirmed significant difference among the three teaching methods ($P = 0.039$).

Table 2: 'Concurrent learning' with the separation of teaching methods in the classroom and the laboratory

Stud-ent No.	Sex	Class (Learning Knowledge)				Laboratory (Learning Skills)			
		Lecture	Problem Solving	Problem Based	Total Difference	Lecture	Problem Solving	Problem Based	Total Difference
1	Female	7	4	5	16	5	5	6	16
2	Female	5	3	4	12	2	3	7	12
3	Female	5	5	6	16	5	5	6	16
4	Female	5	3	3	11	6	6	4	16
5	Female	5	6	7	18	6	6	6	18
6	Male	6	5	6	17	5	7	6	18
7	Male	5	3	4	12	3	6	6	15
8	Male	6	6	8	20	6	4	8	18
Average		5.5	4.375	5.375	15.25	4.75	5.25	6.125	16.13
Standard error		0.2673	0.4605	0.5957	1.146	0.5261	0.4532	0.3981	0.7181
KS normality test	$P=0.0018$	$P>0.10$	$P>0.10$	$P>0.10$	$P=0.0177$	$P>0.10$	$P=0.0102$	$P>0.10$
Friedman test		0.039				0.130			

But in the laboratory problem based, problem solving and lectures of teaching methods, respectively, had the best performance in 'concurrent learning' variable. However, this difference was not statistically significant ($P = 0.130$).

Total difference in average statistics of the laboratory was higher than the classes about a score. So all in all 'concurrent learning' in the lab was better than the classroom due to the better performance of problem-based and problem-solving methods in the laboratory. However, according to Table 4, these differences were not statistically significant. Also according to Table 4, the students' 'concurrent learning' and also the efficiency of three teaching methods in the classroom and laboratories were independent from their sex.

In summing up the results of this section, it can be said that students regardless of their gender, in the classroom with lectures and problem-based teaching methods and in the laboratory with problem-based and problem-solving teaching methods had better 'concurrent learning'. So, a combination of appropriate classroom and laboratory-teaching techniques for a particular curriculum reinforced the content learning.

The Results of Theoretical and Practical Usage Test of Knowledge and Skills

Table 3 indicates that students earned the highest scores in the theoretical usage test, respectively, on the syllabuses that were taught by means of lectures, problem-based and problem-solving methods and their differences were significant ($P = 0.0036$). Dunn's multiple comparison

Table 3: Test results 'knowledge and skills usage' with the separation of teaching methods in the classroom and the laboratory

Stud-ent No.	Sex	Class (Learning Knowledge)				Laboratory (Learning Skills)			
		Lecture	Problem Solving	Problem Based	Total Score (15)	Lecture	Problem Solving	Problem Based	Total Score (15)
1	Female	5	4.25	5	14.25	1.75	2.7	3.75	8.2
2	Female	5	2.25	5	12.25	1.75	2.7	3.2	7.65
3	Female	5	4.25	3.25	12.5	2.5	1	3.325	6.825
4	Female	5	1.75	5	11.75	2.75	2.7	3.25	8.7
5	Female	–	–	–	–	2.75	2.7	3.85	9.3
6	Male	5	4.25	5	14.25	1.75	3.35	4.225	9.325
7	Male	4.5	4.25	5	13.75	4	3.7	2.525	10.225
8	Male	5	4.25	5	14.25	2.75	4	1.3	8.05
Average		4.929	3.607	4.75	13.29	2.5	2.856	3.178	8.534
Standard error		0.0714	0.4185	0.25	40.98	0.2714	0.3220	0.3234	0.3814
KS normality test		$P<0.0001$	$P=0.0002$	$P<0.0001$	$P>0.10$	$P>0.10$	$P=0.0255$	$P>0.10$	$P>0.10$
Friedman test		0.2851				0.0036			

tests also confirmed the significant weakness of problem-solving methods. But at the final practical test, students achieved highest scores in problem-based, problem-solving and lectures-teaching methods, respectively. But these three teaching methods had no significant differences ($P = 0.2851$). Also according to Table 4, the taught syllabuses with problem-solving method, women earned significantly lower practical scores than men ($P=0.017$).

Student 5 was absent at the usage test. Based on the research ethics principle, students were empowered at entrance and continuation of the participation.

According to Tables 3 and 4, the performance of students in the theoretical usage test was significantly better than the practical usage test. With regard to the comparison results of each student with themselves in the classroom and the laboratory, as well as the results of Table 4, this difference can be more seen in the taught syllabus with lecture and problem-based method. Also according to Table 4, student performance on the 'usage' test and also the three teaching methods in the classroom and the laboratory, except for problem-solving method in practical test, were independent of their sex. In summing up the results of this section, it can be said that students regardless of their gender had better performance with lectures and problem-based teaching methods in the classroom and problem-based method in the laboratory in 'usage of knowledge'.

Table 4: The results' comparison of the students' performance in the classroom and at the laboratory

Studied Variables	Class/Lab		(Mann–Whitney Test, *P*)	
	Test type	(*P*)	Class	Lab
'Concurrent learning' total	Paired *t*-test	0.291	0.365	0.433
'Concurrent learning' lecture	Wilcoxon	0.167	0.389	0.875
'Concurrent learning' problem solving	Paired *t*-test	0.195	0.643	0.442
'Concurrent learning' problem based	Wilcoxon	0.131	0.451	0.393
'Knowledge and skill usage' total	Paired *t*-test	0.0001	0.142	0.180
'Knowledge and skill usage' lecture	Wilcoxon	0.017	0.248	0.433
'Knowledge and skill usage' problem solving	Wilcoxon	0.237	0.186	0.017
'Knowledge and skill usage' problem based	Wilcoxon	0.028	0.386	0.456

Students' Views about Appropriate Teaching Methods in Practical and Theoretical Courses

Upon completion of the administrative process of research and at the end of semester, students' views about teaching methods appropriate for class and lab were taken. All students believed that lecture is the best method for teaching in lab. Also students 1, 2, 5, 6 chose problem-solving method and students 3, 4, 7, 8 selected problem-based method as the most appropriate teaching method for teaching at the class. So, we can say that students considered using the new teaching methods such as problem-solving and problem-based methods as appropriate methods just for theoretical units.

DISCUSSION

Structural and moral constraints always exist for interventional study in educational environments. In this study, we tried to, by selecting appropriate research projects to these constraints, provide necessary conditions for conducting a quasi-experimental study. The most important constraint was to achieve the highest number of postgraduate students who have the same or controllable background variables – repeated measurements in research projects in a pilot group, students' performance compared with their own, independently, rather than with the control group. This feature with reduction of error sources and many threats to internal validity increase statistical power and internal validity of the study and require smaller sample size (Sancar-Tokmak, 2013; Fadde, 2009). So for this study, due to structural limitations, providing more than eight students with equal educational status was not possible; this research project looks good. Moreover, morally a single-group design makes that all students benefit equally from the interests of multiple teaching methods. However, the absence of one of the students (Table 3) make it necessary to examine the effect of morality threat and also the effect of historical threat and maturation threat about the results of usage test. In measurement of pre-and post-test is necessary (Cohen, 1988; Ellis, 1999; Trochim,

2005). In the research designing, using the practical and procedural questions of pre- and post-test and modifying them according to the different topics of each teaching session was done to reduce the impact of the test threat (Chase *et al., 2009*).

Also distribution of teaching sessions throughout the semester, according to the curriculum and the limited number and multiple-choice form of pre- and post-test questions, inhibits the exhaustion repeated tests and measurement. Also in the applied test, anatomical questions in theoretical discussions and functional test OSPE on practical issues were used to reduce the impact of historical and maturity threat that mainly affects the lower levels of Bloom's taxonomy. Also, because the effect of a student's absence has been the same for all three teaching methods (based on the ethics' principles of research, college students were empowered to enter and continue research process), the threat of loss did not have a significant impact on the results of the study. Above all, internal consistency and the results' agreement that their analysis is reported below indicates a lack of effect of these types of threats to internal validity study. The results of 'concurrent learning' and 'knowledge usage' show that students' ability in 'knowledge usage' is related to their 'concurrent learning'. In both theoretical and practical units, the syllabuses which had better 'concurrent learning' have been used in a better way. Therefore, it is essential that the most suitable methods in students' learning had been used for teaching. For the statistical population of this study, in theoretical units, respectively, lectures- and problem-based methods and in practical units, respectively, problem-based and problem- solving methods had better performance in 'concurrent learning' and 'knowledge usage'. Students in the laboratory have better 'concurrent learning' than in the classrooms. But in 'knowledge usage', students' results in theoretical syllabuses were significantly better than practical syllabuses. This finding appears to be related to different difficulty of test in the areas of skills than knowledge. Since the 'concurrent learning' variable in the classroom and laboratory with multiple choice questions, according to the application level and above in Bloom classification for knowledge domain, have been calculated. The 'knowledge usage' variable in theoretical discussions with anatomical questions at the application levels and higher of knowledge domain has been calculated, but in practical syllabuses with OSPE test and at the level of conducting proficiency independently in the skills domain with Bloom classification, is calculated. The evaluation method and low scores of students in 'knowledge usage' variable in the laboratory causes a feeling of dissatisfaction in them with the changing of teaching methods in practical syllabuses because students' consensus on the appropriateness of the lecture in the laboratory is inconsistent with educational foundations and concrete results of study. As shown in Table 3, in the 'knowledge usage' variable, the taught syllabuses with lecture method in the laboratory, student shad obtained the lowest scores compared to problem-based and problem-solving methods. So, finding the most appropriate teaching and evaluation methods in each educational situation is the most important factor in the learning and knowledge usage of learners. The researchers in the contingent teaching theory considered the 'current performance' of learners as the most important factor in choosing appropriate teaching method (Van de Pol *et al.*,

2015). It is obvious that in the educational complex environment, other factors such as the number and level of the learners, the type and volume of content, duration, time, place, and to teaching facilities and so on are effective in selecting the most appropriate teaching methods. Teaching–learning strategies with a stepped pattern facilitated process of choosing the teaching methods for teachers by transferring 'learners' current performance' factor to the strategic level and the impact of other factors in selecting teaching methods under each strategy. Data analysis based on this model as a theoretical framework of research simply provides richer results. In absolutely theoretical and practical units, problem-based teaching method had the best performance. Based on the theoretical framework of research, these findings are more focused on the appropriateness of teaching method with initial level of learners' performance than related to teaching methods. Parasitology masters students according to previous learning are among advanced learners. So, the third teaching–learning strategy 'based on discovery' provides the greatest motivation and learning in this population. The type and the volume of course and the ability to lectures in transferring the large amount of content within a limited time caused a slight superiority of lectures on theoretical units. In practical units that volume of course is lower and the problem is more objective, problem-based and problem-solving methods performed better than speech. Before teaching will be problem based completely, it is necessary students experience problem-solving method in 'based on practice' strategy. Improving the knowledge and skill scores in learning during the period (Table 2), the high scores of knowledge usage and the poor grades of the skills usage at the end of semester (Table 3) show that students are now required to use the fourth approach the 'based on work' strategy. Based on these results, the students learned the diagnostic processes knowledge in the laboratory; they hadn't acquired sufficient proficiency to apply knowledge and skills (Carraccio *et al.*, 2008; Dreyfus, 2004). According to the stepped pattern of teaching–learning strategies, this dominance by creating learning opportunities in the real environment is created. Adding a training unit to this course or aggregation of similar training courses before entering to the postgraduate research stage (the fifth strategy) could provide this opportunity. Stepped pattern of teaching–learning strategies can help to analyse the similar studies in comparing teaching methods. Most studies on teaching methods are compared absolutely and had paid little attention to their contingency and appropriateness with educational situation and especially with learners' conditions. These studies have reported only part of the reality consisted of the superiority of one teaching method over another. But more important fact than the reality of different levels of teaching–learning strategies and teaching methods is differences in conditions and levels of learners that lack of attention to it causes the dispersion and even evidence contradictions in comparing teaching methods. Sangestani and Khatiban in the city of Hamedan carried out a 16-week pre- and post-test quasi-experimental study with two heterogeneous groups of test and control and sample size of 56 individuals (22 experimental and 34 control subjects) by non-random and targeted sampling. They considered problem-based method superior to lecture method on learning progress and satisfaction of midwifery freshmen and demanded the substitution of problem-based methods for entire course. This study was published

in the Journal of Today's Nursing Education 2013 (Fahrenfort and Lamme, 2012) in the next issue of this magazine 2014 (Ericsson *et al.*, 2006); a 16 weeks quasi-experimental study with similar research projects and the sample size of 90 patients (46 test and 44 control subjects) has been released by Choi, Lindquist and Song in two cities of South Korea (to avoid communication between the two groups). They reported that the learning outcomes of problem based and lectures teaching methods in the first year nursing students were not significantly different (Sangestani and Khatiban, 2013). The conditions of learners are different not only in the two countries, two cities, two periods, two classes, two contents and requires suitable teaching methods, but also it is different in a class and content according to strong and weak students and students' growth proportion during the period (Cohen, 1988; Ellis, 1999; Trochim, 2005). With the growth of learner's learning in a class, proper teaching method at the beginning, middle and end of the course and in each teaching session required monitoring and re-election. The amount of dispersion and complexity with systematic reviews and also meta-analysis cannot be analysed. Therefore, the choice of appropriate teaching methods more than extrinsic evidence is dependent on the ability of teachers to analyse their educational status (Zaidiand Nasir, 2015).

CONCLUSION

Teaching–learning strategies stepped pattern is a simple theoretical framework that can help teachers to select appropriate teaching method in different educational situations. For the educational position of this study, with the growth of student learning during the period, gradually the use of lectures, problem solving and problem based and training among teaching methods is recommended. Future research should be done with a greater number of participants and the use of evaluation methods appropriate to each strategy and teaching methods.

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ICT Resources for Education of Sensory Disabled Children in Inclusive Setup: An Exploratory Study

Sunita Kathuria

ABSTRACT

Education enhances the worth of every human being, and to deny education to someone is to disallow him from realising his full worth and potential. India is experiencing a major shift in educational set-up from segregation to humanity and right-based inclusive education where all children and adults, with their individual strengths and weaknesses, with their anticipations and potentials, have the Right to Education. It is considered that the school system of the country needs to make the required changes in existing processes and operations to meet the needs of all kinds of children under one roof. To meet this objective, information and communication technology (ICT) has been globally accepted and has come up as an instrument to bring change in the system. It includes all those technological tools (hardware and software) which a teacher uses in her classroom to impart knowledge, develop comprehension, practical and presentation skills. In the present research paper, an attempt has been made 'to study the usage of ICT resources for sensory disabled children in inclusive schools at Secondary Stage'. A sample of 60 regular teachers has been selected from 20 Delhi inclusive schools through purposive sampling. Check list, Likert scale and interview schedule have been used as tools for data collection. The main finding of the study revealed that despite the fact that ICT tools have greater potential to foster and actualise inclusive practices in schools, their usage is still limited due to various reasons like inadequate resources, lack of positive attitude, lack of knowledge, time and institutional support and insufficient collaborative approach. Although many aspects of the economy and the society have been transformed through ICT, it has yet to have a tremendous transformational influence on education.

Keywords: Inclusive education, ICT resources for inclusion, Usage of ICT, Sensory disabled children, Teacher's attitude, Inclusion in Government and private schools, Challenges and possibilities

INTRODUCTION

Inclusion

UNESCO's Education for All (EFA, 1990), Millennium Development Goals (MDG, 2000) and all other conventions and frameworks in the field of education emphasise the need of acknowledgement and participation of all in education so that the country and the world can

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grow as a whole. The country's progress and development highly depends on its education system. Stronger the education system, stronger would be the people of the nation. Denying education to someone is to restrict him from realising his full worth and potential. With an aim to provide full participation and equal opportunities, the concept of inclusion came into existence. Although this concept has been endorsed globally for more than a decade, multiple obstacles still remain, which are proving as hindrances to have the full participation of children with disabilities (CwDs) in education. It is conservatively estimated that less than 10% of CwDs in developing countries in the Asia-Pacific region are in school [UNESCO, EFA (Asia and Pacific), 2009]. People with disabilities (PwDs) should not only get what they are entitled for through policies, acts and legislations but should also get what they deserve, that also wholeheartedly by the society. 'Inclusion' in reality is not just integrating children from different background and with different needs under one roof, it is all about modifying, substituting, integrating and omitting the current educational set-up so that learning can happen for all the learners in the true sense.

Inclusive practices adopted in schools are basically of different types: integration, partial inclusion and full inclusion. In integration, CwDs are given the opportunity to study in the same educational institution wherein the regular children study but with no change in the set-up. Whereas, in partial inclusion, the CwDs get education in the regular classrooms almost whole day and students are given specialised services in resource rooms by the special educator or some professional during some part in the day. And at times, schools have their special education set-up wherein the child with disability is made to learn for few days after admission and once the special educator approves that the child is now adjusted and can be included in the regular classrooms, the child is made to sit with regular children. Further, while the CwDs still being in the regular classrooms, constant monitoring is done to observe their behaviour. They are pulled out from regular classrooms and put back to special education set-up on need basis. This process may continue for days, months or years. On the other hand, 'full inclusion' says that special education facilities should be provided in the form of interventions and shall be given to the child as and when required at the place where the child studies rather than removing the child from the regular set-up. In most of the schools of India, the concept of full inclusion is not yet accepted and schools are practicing more of either integration or partial inclusion. Allen (1992) highlighted the exclusion of children with hearing impairment in his research and revealed that most deaf students are considered not to be fit to join regular schools and are given education in special schools as the society carries an attitude that deaf people are not skilled of functioning independently in the hearing world. The UNCRPD (2007) on being thoughtful on the rights of people with disabilities, states that…….

> *States Parties shall take all necessary measures to ensure the full enjoyment by children with disabilities of all human rights and fundamental freedoms on an equal basis with other children.*
>
> (Article 7, UN Convention on the Rights of Persons with Disabilities, 2007)

India is the signatory of Salamanca Statement Framework for Action (1994), Millennium Development Goals (2000) and UN Convention on the Rights of Persons with Disabilities (2007), aiming for goal like 'Education for All'. But education in India for special groups is still struggling for access and quality. Education or training of children with severe disability is a big dream in India and as per the current scenario, even the admission of the students with mild-to-moderate disability in regular neighbourhood schools is a challenge for the parents. Inclusion is important not only for upliftment of the CwDs but also for the evolution of the society. India has adopted various policies and acts on inclusion like RCI Act, Persons with Disability (PwD) Act (1995), National Trust Act (1999) and National Policy for Persons with Disability (2006).Despite all these efforts, inclusion is still at a nascent stage in India. 'Inclusion' is an approach which can be exercised completely by collaborative efforts. It requires collaboration of people like special educators, regular teachers, parents, peer tutors, NGOs(who work as a team)with technology.

ICT and Inclusion

Information and communication technology (ICT) is not a single technology but a combination of hardware, software, multimedia and delivery systems. Presently, ICT in education includes variety of rapidly evolving technologies such as iPads, digital cameras, Internet, Bluetooth, Cloud Computing, DVDs, streaming and applications such as word processors, e-tutorials, digital libraries, computer mediated courses, virtual environment, simulator and so on. ICT has the potential to explore the capabilities, opportunities and possibilities for all learners especially PwDs to obtain maximum benefit out of the available set-up. It also helps in unlocking the hidden potential of CwDs and enables them to demonstrate their skills in different ways by supporting learner's autonomy (NCERT-NCF, 2005). Booth *et al.* (2000) has pointed out that access to education is the first stage in overcoming the exclusion of PwDs from the mainstream. To facilitate this access, it is important to adopt ICT in education committedly so that the regular content of the curriculum can be made available to the CwDs. As per Abbott and Galloway (2003), it has been advised that ICT must be used as a powerful weapon and tool to enable the special schools to become a great resource centres. It has also been recognised in the study that as technology may not help in answering the problems of different difficulties faced by people with different disabilities but it definitely can be proved effective in reducing the number of challenges that a disabled child may face in his/ her learning phase.

Types of Sensory Disability and ICT Tools for Satisfying Educational Needs

Disability is defined as a limitation of the human being in performing his day-to-day activities. The term is used to refer individual functioning, including physical, sensory, cognitive, intellectual impairment and several types of chronic diseases (ICF, 2001). Sensory disability comprises visual, hearing and speech impairment. Visual impairment includes total absence of sight, low vision and legally blind students. Hearing impairment is described as loss of 60 db or more in the better ear in the conversational range of frequencies and is categorised as mild, moderate

and severe hearing impairment depending on the degree of severity (Julka, 2004). IDEA (1990) defines speech and language impairment as a communication disorder such as stuttering, impaired articulation, language impairment or a voice disorder that adversely affects a child's educational performance (Julka, 2012). Despite these challenges, ICT and assistive technology have the potential to make substantial improvements to the lives of the students by promoting equality and fostering the development of CwDs. ICT has put forth wider strategy for the social and educational inclusion of CwDs through making schools, classroom learning, printed text, distance mode learning, Massive Open Online Course (MOOC), Open Educational Resources (OER), flipped learning, Free and Open Source Software (FOSS), game-based learning, Blogs, Internet, Maker space, many mobile applications and social media accessible to disabled people. ICT is not only used in the area of learning but also in assessment by the teachers. Teacher uses various technological tools like e-portfolios, rubrics and quiz-making software's like Hot Potatoes, Socrative, Edmodo, Schoology and so on for assessment, evaluation and providing feedback to children with and without disabilities.

Some of the ICT Tools for Students with Visual Impairments

ICT Tools	Features
Talking books, talking calculators	Auditory output
Alternative keyboards and key guards	Facilitates access to the keys
Touch pads	Helps in tactile processing
Braille printers/braille embossers	Tactile output, computer-generated text into embossed braille output
Screen magnifiers (e.g. MAGic)	For text enlargement and change of foreground/background colours
CCTV (closed circuit television)	Electronic aid to read printed material; to enlarge text, manipulate image, contrast and brightness
Soft braille software	Screen reading with speech synthesiser
Speech synthesiser software like JAWS, SAFA etc. (screen readers)	Converts text to speech
OCR (optical character recognition) device & software, handheld scanners	Allows user to scan printed material into computer and then read aloud with speech synthesiser
Speech recognition programmes	It works in conjunction with word processor, user dictates into a microphone and words appears on the computer screen
Variable speed tape recorders	To capture and listen spoken lectures, playback rate can also be controlled without distorting the speaker's voice
Personal FM listening systems	It transmits the speaker's voice directly into the user's ear, help the listener to focus
Talking & large print word processors software programmes	It uses speech synthesisers to provide auditory feedback of what is typed along with a large text without added screen enlargement
Voice recognitions as input system	User's voice is recognised & transformed into commands

Some of the ICT Tools for Students with Hearing Impairments

ICT Tools	Features
Sign language software (e.g. iCommunicator)	Changes the typed text into sign language on the screen
Visual displays (subtitles)/ closed captioning	Using Subtitles with every image and narration
Speech recognition programmes	It works in conjunction with word processor, user dictates into a microphone and words appears on the computer screen
Audio induction loop	Wireless assistive listening system based on radio frequencies, infrared systems
Light signaller alerts software	Useful when a user cannot hear computer sounds, a light flashes alerting the user about any message

Some of the ICT Tools for Students with Language and Speech Impairments

ICT Tools	Features
PCS (picture communication symbols) (e.g. Makaton, Blissymbolics, Minspeak etc.)	For children with limited vocabulary
VOCAs (voice output communication aids)	VOCAs use digitised speech, a human voice recorded in the device. When the user presses or activates the message button, the VOCA plays a spoken message
TTY (Teletypewriter) /TDD conversion modems (Tele communication Device for the Deaf)	They are connected between computers and telephones to allow the individual to type a message on a computer and send it to TTY/TDD modems

REVIEW OF RELATED LITERATURE

The related studies reviewed focuses on various benefits of technology in bringing inclusion and better understanding. A study on the effects of an interactive computer-based reading strategy on student comprehension conducted by Worell (2011) revealed that all students made significant increases in strategy use from baseline to follow-up. The effect of the study suggests the value of teaching students the interactive computer-based reading strategy for students who struggle with passage comprehension. Randhawa *et al.* (2008) in the study Profile of Students studying in Special schools for the deaf in North India found that in India only 1 out of 10 hearing impaired child goes to school that too a special school. And, out of the total 3,168 students in North India majority were male. The enrolled students had high degree of hearing loss, belonged to mainly lower socio-economic class and most of them were required to cover long distances to be at school. The students enrolled in class X and XII was very low. Moreover, their language and speech development remained poor even after many years of schooling. Though teachers and hearing impaired students were not trained in sign language,

they used non-verbal communication wherein more than half of the things were never communicated to the other person due to lack of understanding. Students also had undergone pre-vocational or vocational training in school but hardly benefitted to get gainful employment on school leaving. Lee and Templeton (2008) in a study presented an overview of Assistive Technologies (ATs) and their use by disabled people for making their life accessible. It has been highlighted in the study that these AT device promote meaningful participation, freedom and independence at home, school and society to people with disabilities. It also helps in boosting up the self-confidence and self-concept of the individual. Anderson and Georgiou (2007) aimed at the issue of e-inclusion in the field of school education in Australia and found that to build up a genuinely inclusive classroom, it is necessary to make system accessible to all students, and, on the other hand, for teachers to develop the competencies to carefully select tools and plan/make a good use of them. Meyer I, Müller and Kubitschke (2006) presented a paper at e-Challenges Conference, New York, NY highlighted on "e-Inclusion – Towards a coherent European policy response to social inequalities in the information society. The researchers attempted to present before the society the additional factors which affect the quality of use of ATs. It was revealed that the content, attitudes and social capital together also affects the use of ATs which in turn hampers directly or indirectly the lives and life chances of all the individuals who use it be it a disabled or a non-disabled person. Clarke (2003) conducted a study on the patterns of interaction between children with physical disabilities using Augmentative and Alternative Communication (AAC) system and their peers. It was found that more often, the 'naturally' speaking peers are the initiators of conversations but children using AAC produced significantly more response moves than their peers. A study conducted by Abbott and Cribb (2001) indicated the possibility of using ICT to bolster identity, reduce isolation and bring the special skills of these schools and units to the mainstream community for mutual benefit. Thorpe (1998) conducted research on the use of personal video conferencing with special needs pupils from three schools serving rural area, this case study highlights a number of key issues relating to the most appropriate use of personal video conferencing – its suitability for small-group work and working interactively within a flexible timetable. Children with special need experienced increased motivation, improved self-esteem, confidence, developed writing skills, able to overcome their relative isolation and develop a range of communication and social skills by the use of technology.

Statement of the Problem

'ICT Resources for Education of Sensory Disabled Children in Inclusive Setup: An Exploratory Study'

Significance of the Study

ICT is globally accepted as a valuable tool for inclusion. It is also realised that the focus on designing approaches and providing facilities for the learner would help in removing the barriers to inclusion. Statistics reveal that there are about 2,500 special schools in India, capable of

accommodating about 100,000 children annually (Census of India, 2001). According to the Ministry of Social Justice and Empowerment, 1.67% of India's population between the age group of 1 and 19 suffer from at least one form of disability. There are 1.2 crore people living with disability in India and 35.39% of all PwDs in the country are children (UNESCO, 2011). If regular schools do not practice inclusion as a priority, then the aim of 'Education for All' would not be actualised (Julka, 2004). And, as the teachers are in a lead role of exercising profound transformation in education system, it is very important to know the perspective and attitude of the teachers towards usage of ICT in inclusive classroom teaching. There is a need to identify the factors that promote good educational practices in classrooms, supported by ICT (Department of Education, 2000). This study presents the availability of 'Inclusion supporting ICT infrastructure' in schools. The study also deliberates on the access and usage of ICT, the influence of ICT on student's learning and the experiences of teachers in integrating ICT with pedagogy.

Research Questions

1. What is the outlook of teachers towards inclusive education?
2. How much teachers are aware about the technological tools in the field of education?
3. How well are ICT resources catering to the needs of students with sensory disability?
4. What are the various ICT resources for sensory disabled students that are being used for better inclusion of CwD?
5. What are the challenges and problems a teacher finds in handling technological tools in inclusive set-up?

Objectives of the Study

The following are the objectives of the study:

1. To assess the ICT infrastructure of schools catering to the needs of differently abled children in inclusive set-up.
2. To find out the attitude of the teachers towards the usage of ICT resources in classrooms.
3. To gauge the support of ICT resources in education of sensory disabled students.

Delimitation of the Study

1. The study is delimited to private and government inclusive schools of Delhi.
2. The study is conducted only on sensory disabled children (includes children with visual impairment, hearing impairment and speech disorder).
3. The study is focusing only on the usage of ICT tools in use for sensory impairment.
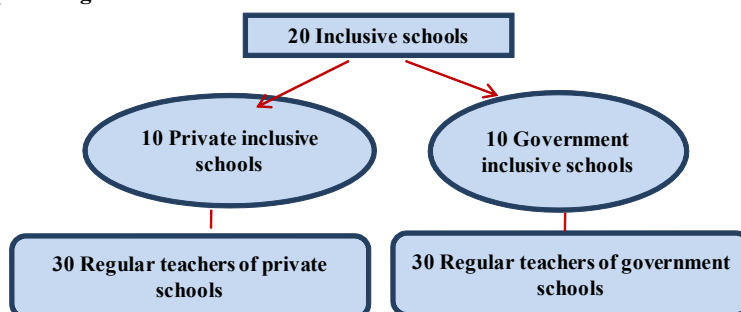
RESEARCH METHODOLOGY

The present study is descriptive in nature with qualitative and quantitative methods employed in data collection and analysis.

Population and Sample of the Study

The general population for this research paper consisted of all the inclusive schools and the teachers teaching in these inclusive schools of Delhi.

Sample: For selecting a sample, 20 inclusive schools have been identified and selected through non-probability sampling technique (purposive sampling). Out of these 20, 10 schools are private inclusive schools and 10 are government inclusive schools. From these schools, data have been collected from 60 regular teachers for further analysis and interpretation.

Sample Design

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                    ┌─────────────────────┐
                    │ 20 Inclusive schools │
                    └─────────────────────┘
                      ↙               ↘
          ╭───────────────╮     ╭───────────────╮
          │ 10 Private    │     │ 10 Government │
          │ inclusive     │     │ inclusive     │
          │ schools       │     │ schools       │
          ╰───────────────╯     ╰───────────────╯
                 │                      │
      ┌────────────────────┐  ┌────────────────────┐
      │ 30 Regular teachers│  │ 30 Regular teachers│
      │ of private schools │  │ of government      │
      │                    │  │ schools            │
      └────────────────────┘  └────────────────────┘
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Tools Used in the Study

Tool	Purpose	Type of Item	No. of Items
Check list	To assess the ICT infrastructure of the school	List of ICT equipment (basic and advanced ICT tools)	22
Likert scale	To know the attitude of the teachers using ICT in teaching inclusive classroom	Statements framed on 5 parameters	20
Interview	To gauge the support of ICT in education of sensory disabled students	Unstructured questions	8

Findings: The findings are as follows:

- Majority of the private schools have all the basic ICT tools and some of them have advanced ICT tools also.
- Majority of the government schools do not even have basic ICT tools.

Interpretation

- It is found that although most of the private schools of Delhi are equipped with ICT infrastructure as compared with the government schools, but they are still not able to

Analysis and Findings of the Study

Analysis of Checklist

Type of Tool	Name of Tool	Frequency (Out of 10 Pvt. Schools)	Frequency (Out of 10 Govt. Schools)
Basic ICT tools	Overhead projector	10	3
	Computers	10	10
	Internet	10	4
	Radio	9	3
	Television	6	–
	Screen magnifiers	8	3
	Use of mike and speakers	8	–
	Software (text to speech and speech to text)/soft braille software/sign language software/light signaller alert software	9	2
Advanced ICT tools	Interactive white board	9	–
	Modified keyboards	3	–
	Alternative pointer devices	2	–
	Loop induction device	4	2
	Audio induction loop	–	–
	Touch pads/tactile devices	5	–
	Eye gazers	–	–
	CCTV in teaching	1	–
	Braille e-books	2	–
	Digital cameras	5	–
	Braille printers/braille embossers	–	–
	Talking calculators	3	1
	VOCAs (voice output communication aids)	3	–
	OCR devices (print-soft image-speech)	–	–

maintain the standard of the resource room which is expected by the system. Most of the schools have only the basic ICT tools but as technology is advancing, there is a strong need of advanced technological tools for meeting the educational needs of CwDs. By having the latest tools, the implementation can be fast tracked and adoptability can be increased.

- The ICT infrastructure of government schools is way below standard norms. Let alone advanced ICT tools, even the basic ICT tools are not present in these government schools. The realisation of inclusion in true sense in government schools still seems to be a distant dream with the kind of facilities they have. There is least collaboration between schools, NGOs and resource centres.

Analysis of Likert Scale

Findings

Attitude of Teachers	Negative (scoring: 0–20)	Neutral (scoring: 21–80)	Positive (scoring: 81–100)
Percentage of Teachers	20	66.6	13.33

Total number of teachers: 60 (30 private + 30 govt.)

Total number of teachers with a positive attitude: 8 (private school)

Total number of teachers with a neutral attitude: 40 (22 of private + 18 of govt.)

Total number of teachers with a negative attitude: 12 (govt. schools)
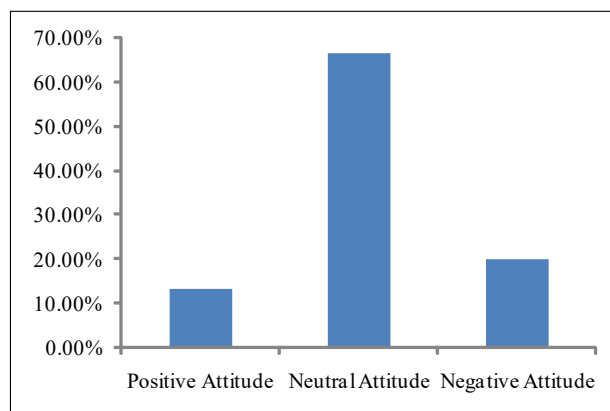
Attitude of teachers towards usage of ICT

Comparison of attitudes between Govt. and private teachers

- None of the private school teachers carries negative attitude towards usage of ICT. 8 teachers (private school) have positive attitude and 20 teachers have neutral attitude.

- Out of 30, 12 government school teachers have negative attitude and rest 20 teachers have neutral attitude towards usage of ICT in inclusive education. None of the teachers in government set-up has positive attitude.

Interpretation

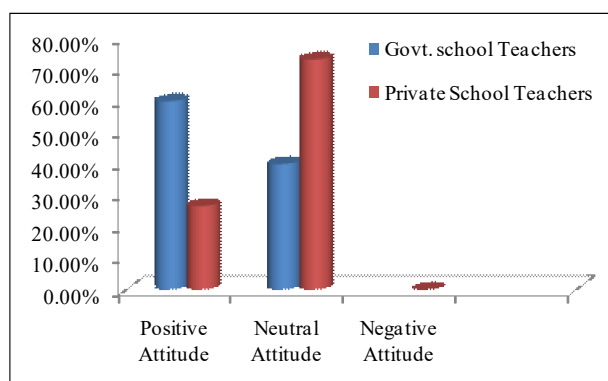Overall, most of the teachers fall under the neutral range, whereas fewof the teachers fall under the range of positive attitude and there are some teachers who have negative attitude towards ICT usage in an inclusive set-up.

An interview was conducted to find out the reason behind the neutral and negative attitude of the teachers. As per the interview, it can be interpreted that the possible reasons behind the neutral attitude of the teachers are the insufficient and impractical curriculum of the teacher training programme which makes ICT tool usage extremely difficult for them, insufficient resources in schools, expensive ICT tools (hardwares and softwares), limited time, lack of accessibility of a tool, parent's support, lack of regular refresher trainings and connectivity failure between different stakeholders. These problems are major in government schools as compared with private schools, due to which government school teachers have either negative or neutral attitude. **The point to be highlighted here is that the teachers who are using technology in teaching–learning and have appropriate knowledge about it have positive attitude towards inclusion and technology**. This concludes that more we train teachers in using technology, more we can be hopeful for inclusion in Indian classrooms.

There is a possibility that the teachers who fall under the neutral zone might move towards the zone of positivity as they all are aware about the effectiveness of the ICT resources and showed their interest towards the inclusion of ICT in their teaching but could not use it effectively and efficiently in their classrooms because of above-mentioned reasons.

ANALYSIS OF INTERVIEW

Findings

It is found that most of the teachers find ICT tools as one of the best aids for providing varied knowledge to the students and have acknowledged that ICT has a potential of fostering independence, making teaching–learning process easy as well as interesting. As technology is multidimensional, it enables multiple human senses to be active all the time, which aids in better learning and makes the learning long lasting. During the interview, it was highlighted that MOOC, open educational resource material and FOSS help teachers to prepare instructions, increase the accessibility of text to sensory disabled students and create a positive environment for better learning. Monitoring 'the learning of sensory disabled students' has become easy

with technology. Most of the teachers agreed that usage of ICT has helped in making their teaching process effective. It has made their teaching more organised and disciplined. It can be proved effectivein evaluation and social skill development of sensory disabled children. However, it has also been found that the teachers accept the problems that e-inclusion brings in education like time constraint, problem in completion of syllabus, challenge in organised and disciplined teaching, pedagogical practices vs technical skills and too expensive to use regularly. But, the increase in curiosity, confidence, positive attitude, participation, increased concentration level and internal motivation of the learner with and without disability cannot be overlooked. Teachers also accepted that the ICT resources can be used productively to eliminate the barrier of participation of differently abled students (sensory disabled students) in different co-scholastic activities. All the teachers interviewed acknowledged the potential of ICT resources in making teaching–learning process effective.

Some of the challenges and problems pertaining to usage of ICT resources to bring inclusion of sensory disabled children are as follows:

- **Inadequate resources and lack of time:** The teachers who have some training on ICT are not even able to use it due to the lack of appropriate resources in schools and also due to the shortage of time for incorporating the technology into the planning.

- **Cost:** The technology-based tools are expensive and hence are inaccessible to the people as the high percentage of the population with disability lives below or around the poverty line. Due to their low socio-economic background, these people can approach only to government schools where due to lack of funds, the quality of facilities and education is questionable.

- **Losing control of the learning:** The controlled learning environment and sustaining discipline is the foremost priority for most of the teachers. Any proposal of implementing very advanced teaching practices such as using ICT is seen as threatening this orderly pattern and therefore not looked forward to. Despite having so many researches on ICT benefits, some of the teachers fear and doubt on its implementation in Indian classrooms.

- **Support from the school:** Whenever there is an acceptance of an innovative technique in the system, the best way is to involve the whole school in the process of planning change. This means, all the staff members to work collaboratively as a team to adopt ICT in the school and be compassionate to gain new knowledge and skills from each other. If this collective approach is not adopted, then, even the in-service trainings would not help in integration of ICT in teaching. So, basically it works on the attitude of the teachers.

- **Inappropriate training programmes for in-service teachers:** The ICT professional development course for in-service teachers does not help in making them competent to revise their pedagogical practices by substituting their traditional approaches. There is a misalignment in the requirements and the training module as even after attending the courses, teachers only knew how to run some softwares and to handle some hardwares.

- **Questioning professional practice:** The trend of 'questioning professional practice' is missing in Indian schools. We are reluctant to challenge the 'status quo'. Once teachers have finished their pre-service training programme, they are not motivated to improve their practice and learn new skills.

- **Basic ICT tools:** Despite of awareness of the revolutionary role of ICT in education for children with or without disability, the schools are limited to the use of basic ICT tools.

- **ICT as effective tool:** It has been found that ICT has a potential of creating positive attitude, it makes learning interesting and long-lasting. It makes learner autonomous and reduces dependency of a regular teacher on resource teacher. It has potential of increasing the level of curiosity, participation, internal motivation, confidence in students and helps in fulfilling the aim of education – 'all round development of a child'. But, there is limited availability of specialised disabled friendly hardware and software resources due to business constrains.

- **Lack of information on existing softwares** and the challenge of using them (due to language constraint) for disabled children who belong to different sociocultural background.

- **Stress, anxiety and fear:** The presence of stress, anxiety and fear of downfall of academic achievement in teachers are some of the hindrances in the usage of ICT in inclusive classrooms.

- **Lack of positive attitude:** Lack of positive attitude of teachers towards inclusion and ICT integration. Research indicates that the successful implementation of inclusion is largely dependent on educators being positive about it (Bhatnagar and Das, 2013; Das *et al.*, 2013). Due to various reasons such as large class size, poor infrastructure, lack of resources, lack of support, lack of training, socio-economic background of students and so on, many teachers find it impractical to include children with special needs in regular Indian classrooms. It is noteworthy that surveyed teachers who have knowledge and access to ICT in teaching and learning have more positive attitude towards inclusion and use of ICT.

- **Improper implementation of inclusion policy in India:** The CwD are given admission in government schools on the basis of zero rejection policy of Sarva Shiksha Abhiyan (SSA, 2001) but there are lack of provisions for skill development of staff, training of teachers, resources, guidance and counselling, infrastructure, special educator and so on. Due to these, inclusion policy has taken the backseat with the usage being really low, which is quite unfair to the students with disability in government schools.

CONCLUSION

As far as the argument on technology inclusion and inclusive education is concerned, it has been realised by the researcher that even at present, inclusive schools in Delhi are predominantly catering to soft disabilities only. The concept of inclusion in real sense is being mistreated and

misunderstood to some extent by the society. The process of admission in schools is still selective. Children with major disabilities like multiple disability, cerebral palsy, autism and so on are hardly considered fit for the regular schools.

Regarding integration of ICT in education especially for students with disabilities, it is concluded that although ICT has played a major in many aspects of human life to bring social development and change, its transformational effect hasn't still been explored fully on education due to certain problems and challenges. Most of the schools are neither using nor aware about the variety of ICT resources which can be used in making teaching–learning process accessible to children with diverse needs. The attitude of the teachers is also a point of concern as the research shows that most of the teachers carry neutral and negative attitude towards usage of ICT in education.

SUGGESTIONS

Suggestions for Teachers and Students

- Teacher needs to be self-motivated towards enrolling himself in various open online courses to acquaint self with new technological tools. The programmes and courses need to orient and sensitise the teachers to distinguish between judgmentally beneficial, developmentally suitable and the unfavourable use of ICT so that teachers can replace their traditional mode of teaching with technological-based teaching. ICT can be creatively used for professional development and academic support of the pre-service and in-service teachers.

- Teachers need to focus on time management as sufficient time is required for preparation and proper planning of transaction of curriculum with integration of innovative ideas and appropriate technology.

- Refresher training may be conducted from time to time to upgrade the knowledge of the teacher.

- Teachers need to work on students' readiness towards using ICT tools in classrooms.

- Good coordination between special educator and a regular teacher is absolutely vital.

- Teachers need to be updated about new educational policies (like policy on ICT and schemes for PwD) so that needful guidance could be provided to parents regarding availability and concessions on purchase of technology-based tools under governmental schemes (ADIP scheme (Assistance to Disabled persons for Purchase/ Fitting of aids/ appliances), ALIMCO (Artificial Limbs Manufacturing Corporation of India), PwD (Persons with Disability) Act-1995, National Trust Act-1999, SSA-2001, RTE (Right to Education)-2009, RMSA-2009 (Rashtriya Madhyamik Shiksha Abhiyan) scheme etc.). Counselling of the parents need be done regularly to make them aware about the effectiveness of ICT tools.

- The softwares and applications may be made available free of cost or at affordable prices to the schools and to CwDs.

- Sharing of best practices, positive experiences and learning from classroom practices to improve performances are the need of the hour.

- Teachers need to be updated with the knowledge of some inexpensive ICT tools, mobile applications, MOOC, OER materials, national websites and online free software through a team from block/cluster resource centre or through refresher trainings.

- Appropriate training for students for the right and best usage of ICT resources.

- Students need to motivate themselves towards using new technology.

- A collaborative learning attitude needs to be adopted by the students for better learning through ICT.

- Opportunity for maximum practice on ICT tools to the students may be given by the schools to develop interest in them.

Suggestions for Curriculum Planners and Ministry

- Special financial assistance to promote research on innovation in technology and on inclusive school system.

- Development and regular updation of knowledge sharing systems: The development of a national online database on ICTs and Assistive Technologies(ATs) will help in providing teachers, researcher, school management, students and their families with accurate, reliable information on ATs and their availability in the country (like Punarbhava of RCI).

- Accessibility of educational softwares and hardwares: Government to keep a check on the rates of the tools.

- To promote research in developing AT software such as screen readers in different local languages to remove language barrier.

- Co-operation between stakeholders and research on the best practices should be enhanced.

- Promotion of research on inclusion and ICT.

- Parent awareness and training.

- Revision of curriculum and education policies as per the requirement.

- Stringent laws on zero rejection policy (of CwD).

- Advocating and supporting more open source applications development for differently abled people.

- Establishing of new and strengthening of existing block/cluster/state resource centres by making them fully equipped with all the ICT tools which are required for full inclusion. The expensive ICT tools may be issued to the neighbourhood schools of CRC/BRC, if required through easy-issuing procedures (with not much of paper work).

- More focus is required towards identification of model schools (which are practicing full inclusion with integration of ICT) in Delhi through an assessment team working under Project Approval Board.

- Establishment of disability resource centres in each district of the state or depending upon the population of disabled people in the state.

- The responsibility of spreading awareness and knowledge about inclusion and ICT may be equally shared by MoSJ&E and MHRD.

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Teaching Techniques and Students' Satisfaction in Tertiary Education: A Study from Bangladesh

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ABSTRACT

This study attempts to assess the impact of teaching techniques on students' satisfaction in tertiary education of Bangladesh. The study was carried out in Khulna University following survey research design. A total of 343 undergraduate students who were selected following multistage random sampling participated in the study. A semi-structured questionnaire containing both open- and close-ended items has been used for data collection. Findings reveal that most of the students were moderately satisfied and the satisfaction level was found to be associated with proper management of class time, fair grading system of the teacher, available course outline, friendly interaction with students although teaching method in that order such as presentation of lecture, clarity of concepts, use of teaching aids in the class, formative assessment strategies and teachers' care for students' learning did not have any significant impact on students' satisfaction in this study. Besides, although academic achievement and type of school influenced their level of satisfaction, students' age, sex and year of study did not influence their satisfaction level.

Keywords: Teaching, Learning, Quality, Students' satisfaction, Tertiary education, Bangladesh

INTRODUCTION

Students' satisfaction is the favourability of a student's subjective assessment of the various outcomes and experiences associated with education (Elliott and Shin, 2002). University students' satisfaction has become an important component of quality assurance in tertiary level (Fattah, 2016). The quality of teaching and learning at the institutions of higher education is a major concern, since the quality of teaching and learning happens to be one of the instruments influencing students' satisfaction. One of the indicators of a good institution of higher education is its teaching and learning quality (Suarman *et al.*, 2013). Considering the importance of quality of teaching and learning, access to and assurance of high quality in education are declared to be a prime concern for the Government of the Bangladesh at present (Rahman, 2010). The country has made a notable progress in the education sector in the last two decades especially in tertiary education sector and has expanded the number of educational institutions, but the standard of education and facilities is still insufficient, which affects students' level of satisfaction (Huq and Rahman, 2008).

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Students' satisfaction is widely recognised as an indicator of the quality of students' learning and teaching experience (Ciobanu and Ostafe, 2014). It is a multidimensional process which is influenced by a number of factors (Weerasinghe *et al.*, 2017). Personal and institutional factors influence on students' satisfaction in higher education (Marzo-Navarro *et al.*, 2005; Appleton-Knapp and Krentler, 2006). Wilkins and Balakrishnan (2013) identified quality of lecturers, quality of physical facilities and effective use of technology as key determinant factors of student satisfaction. As well as, student's satisfaction in universities is greatly influenced by quality of class room, quality of feedback, lecturer–student relationship, interaction with fellow students, course content, available learning equipment, library facilities and learning materials (García-Aracil, 2009; Kuh and Hu, 2001; Sojkin *et al.*, 2012). Although students' satisfaction in universities is affected by various factors, quality of teaching–learning activities has generated a lot of interest in recent years. Students' satisfaction is directly affected by the quality of teaching and learning (Guosheng *et al.*, 2010). Navarro *et al.* (2005) examined that teaching methods have significant effect on students' satisfaction. Touching on lecturers' clarity of presentation, Shea *et al.* (2003) and Swan (2001) argued that instructors' facilitation and clarity of presentation are highly correlated with students' satisfaction level.

Northrup (2002) indicated that students are expected to be more satisfied if the course materials are relevant and useful and involve real-life examples, facts and cases. Yang and Cornelius (2004) found that students became frustrated when their lecture notes were poorly designed. Some studies found that lecture note is positively correlated with student's satisfaction (Shea *et al.*, 2003; Swan, 2001; Long *et al.*, 2014). In addition, effective use of technology and teaching aids has significant influence on students' satisfaction (Wilkins and Balakrishnan, 2013; García-Aracil, 2009). It is evident from the findings of previous studies that interaction between teachers and students significantly influences students' satisfaction and perceived learning (Fresen, 2007; Northrup, 2001; Shea *et al.*, 2003; Swan, 2001). On the other hand, learning outcome of the students also influences their satisfaction level and Shin *et al.* (2003) in a study found that high degree of dissatisfaction is related with poor learning outcome of the students.

The key to the development of higher education today is the enhancement in the quality of teaching and learning. Therefore, students own the rights to receive quality education and it is the responsibility of the faculty to ensure the quality of the courses and programmes offered. Despite the significance mentioned, there are still not much effort contributed in investigating the relationship between the quality of teaching and learning and students' satisfaction in Bangladesh. For these reasons, the present study aims at assessing the impact of the teaching techniques on students' satisfaction in Khulna University through an empirical research work.

METHODS AND MATERIALS

The study is explanatory in nature and carried out following survey research design to assess the impact of teaching quality on students' satisfaction in Khulna University under Khulna District of Bangladesh. A total of 4,497 undergraduate students from 25 disciplines under five

schools and one institute of Khulna University were the population in this study. A sample of 343 undergraduate students was randomly selected following multistage random sampling. A semi-structured questionnaire containing both open-ended and close-ended questions was used for data collection. Data were collected from the field using questionnaire in September 2016. After collecting the data, the raw data were processed primarily by removing illogical codes as well as reducing logical inconsistencies and errors and solving ambiguities. Later on, data were coded to classify them into meaningful codes in according to its quality and quantity. Afterwards, the data were tabulated on the basis of similarities, attributes and intervals by using Statistical Package for the Social Sciences version 20.

A total of 11 variables were identified to assess the teaching quality of the teachers in Khulna University, namely course outline provided, teaching method followed, uniqueness in presentation, comprehensiveness, use of modern teaching aids, proper time management, formative assessment strategies, fairness in grading, teachers' dedication in teaching, friendliness in interaction and students' learning outcome. All the variables were encoded as dummy variable for multiple regression analysis where the value '1' is coded for the response 'Yes' and '0' for 'No' response. In the case of teaching method followed, 'teacher-centred method' was coded as '1' and other responses were coded as '0'. And with reference to formative assessment strategies, 'written assessment' was coded into '1' and other assessment strategies were coded into '0'.

Student's Learning Outcome Index consisted of eight dichotomous-type sub-questions with two answers, computed by two points – 0 and 1, including '1' for 'Yes' and '0' for 'No'. To construct the index, the scores of different questions were added up, and the total value was used for inferential statistical analysis, and for descriptive analysis, the value was divided into two equal intervals, for example 'High' and 'Low'. Therefore, the highest score represented higher learning outcome of the students. The Student Satisfaction Index consisted of 16 different Likert-type sub-questions with five answers, computed by five points – 1 to 5, including '1' for 'Highly Dissatisfied', '2' for 'Dissatisfied', '3' for 'Undecided', '4' for 'Satisfied' and '5' for 'Highly Satisfied'. To construct the index, the scores of different questions were added up and divided into three equal intervals, for example low, medium and high for descriptive statistics and for inferential statistical analyses, the total value was used. Therefore, the highest score represented higher satisfaction of the students.

RESULTS

Teaching techniques

Findings reveal that majority of the students (70.3 per cent) reported of teachers providing course outline and explaining course objective. About half of the students (49.0 per cent) mentioned that cooperative teaching method was followed by the teachers. Around two-thirds of the students (64.7 per cent) stated that teachers' lectures were well presented in the class, and nearly 70 per cent of them claimed that teachers make difficult topics easily understandable. The highest number of the students (63 per cent) claimed that teachers use teaching aids in the

Table 1: Students' feedback on teaching techniques

Variables	*N* = 343	Per Cent
Course Outline Provided		
Yes	241	70.3
No	102	29.7
Teaching Method Followed		
Teacher-centred	117	34.1
Student-centred	59	17.2
Cooperative	167	48.7
Interactive Presentation		
Yes	222	64.7
No	121	35.3
Comprehensiveness		
Yes	239	69.7
No	104	30.3
Use of Modern Teaching Aids		
Yes	216	63.0
No	127	37.0
Proper Time Management		
Yes	230	67.1
No	113	32.9
Formative Assessments Strategies		
Written assessment	206	60.1
Oral assessment	50	14.6
Work-integrated assessment	87	25.4
Fairness in Grading		
Yes	260	75.8
No	83	24.2
Dedication in Teaching		
Yes	218	63.6
No	125	36.4
Friendliness in Interaction		
Yes	228	66.5
No	115	35.5
Students' Learning Outcome		
Low	110	32.1
High	233	67.9

class, and about 67 per cent said that teachers properly manage class time. Besides, 61.1 per cent of the students reported that written assessment was followed by the teachers, and three out of each four students said that teachers' grading system was fair. Majority of the students (63.6 per cent) mentioned that teachers are careful for students' learning. In the case of teacher–student interaction, two out of every three students reported that teachers would interact with students in a friendly manner. In accordance to the learning outcomes provided in curriculum, about 68 per cent of the students were reported of high level of achievement (Table 1).

Students' Satisfaction Level

Data presented in Table 2 depict that majority of the students (53.6 per cent) were moderately satisfied with the teaching–learning activities they experienced. While 27.7 per cent students' satisfaction level was high, the rest 18.7 per cent students reported of low-level satisfaction.

Table 2: Students' satisfaction level

Satisfaction Level	N = 343	Per Cent
Low	64	18.7
Medium	184	53.6
High	95	27.7

Table 3: Estimates of teaching techniques and student satisfaction

Variables	Parameter Estimates			
	B	Beta	*T*	*p*-value
Constant	26.096		14.045	0.000*
Course outline provided	2.996	0.114	2.821	0.005**
Teaching method followed	-2.142	-0.085	-2.115	0.035**
Interactive presentation	0.750	0.030	0.712	0.477
Clarity of concepts	0.933	0.036	0.903	0.367
Use of modern teaching aids	0.865	0.035	0.912	0.362
Proper management of class time	3.821	0.150	3.665	0.000*
Formative assessment strategies	0.603	0.025	0.661	0.509
Fair grading system	4.050	0.145	3.617	0.000*
Teachers' care for students' learning	1.764	0.071	1.634	0.103
Friendly interaction with students	2.295	0.091	2.222	0.027**
Learning outcome of the students	2.891	0.412	8.347	0.000*
R	0.739			
R square	0.546			
Adjusted *R* square	0.531			

* Significant at $p < 0.01$; ** Significant at $p < 0.05$

Teaching Techniques and Student Satisfaction

Results of multiple linear regression analysis show that the 11 variables on teaching techniques are able to predict variation in students' satisfaction significantly up to 54.6 per cent at 0.01 levels. Besides, learning outcome of the students appeared to be the best predictor of student satisfaction ($\beta = 0.41$, $p < 0.01$), followed by proper management of class time ($\beta = 0.15$, $p < 0.01$), fairness in grading ($\beta = 0.15$, $p < 0.01$), course outline provided ($\beta = 0.011$, $p < 0.01$), friendliness in interaction ($\beta = 0.09$, $p < 0.05$) and teaching method ($\beta = 0.09$, $p < 0.01$) in that order. But interactive presentation of lecture, clarification of concepts, use of teaching aids in the class, formative assessment strategies and teachers' care for students' learning did not have any significant impact on students' satisfaction (Table 3).

Variation in Students' Satisfaction

To identify the factors that affected variation in students' satisfaction, an analysis of variance (ANOVA) test was conducted. Table 4 reveals that the variations in students' satisfaction were

Table 4: Factors affecting of students' satisfaction

Parameter	*N*	Min	Max	Mean	S.D.	*F*	*p*-Value
Age Composition (in Year)							
17–21	223	23	76	52.73	11.74	0.015	0.902
22–26	120	25	80	52.56	12.49		
Sex Composition							
Male	176	23	76	51.86	12.26	1.652	0.200
Female	167	27	80	53.52	11.67		
School of Study							
SET school	153	25	80	50.12	12.45	7.072	0.000*
Life science school	112	26	75	53.94	10.79		
Social science school	78	23	74	55.85	11.77		
Year of Study							
First year	73	26	76	52.49	12.21	0.387	0.763
Second year	72	23	73	52.78	12.38		
Third year	126	25	74	53.38	11.13		
Fourth year	72	23	80	51.49	12.94		
Academic Achievement (GPA)							
High (3.50–4.00)	119	26	80	60.64	8.71	139.186	0.000*
Medium (3.00–3.49)	169	26	71	52.35	9.14		
Low (below 3.00)	55	23	64	36.40	8.63		

* Significant at $p < 0.01$.

statistically significant in terms of academic achievement (GPA) of the students ($F = 13.18$, $p < 0.01$) and school of study ($F = 7.07$, $p < 0.01$). But the variations in mean scores were not statistically significant with reference to students' age ($F = 0.01$, $p < 0.05$), sex ($F = 1.65$, $p < 0.01$) and year of study ($F = 0.39$, $p < 0.01$).

DISCUSSION

As the efforts to improve the quality of teaching and learning are priority concern for higher learning institutions (Suarman, 2015), student satisfaction inevitably becomes an important indicator for measuring its effectiveness. Findings reveal that more than half of the students were moderately satisfied, and students' learning outcome was the best predictor in that case. In addition, fair grading system of the teacher was found to be associated with students' satisfaction, and the finding is consistent with the existing literature (Tessema *et al.*, 2012). Alongside, it was observed that the interaction between the students and teachers has positive relationship towards the satisfaction of the students which corresponds with Palmer and Holt (2009).

Teaching method is another dimension of teaching quality, and findings of this study revealed that teaching method has significant impact on students' satisfaction. Sadeghi *et al.* (2014) in a study found that students' satisfaction in blended learning method was higher than lecture method. Findings of the study also depicted that proper management of class time and course outline was positively correlated with students' satisfaction. But presentation of lecture, clarity of concepts, use of teaching aids in the class, formative assessment strategies and teachers' care for students' learning didn't have any significant impact on students' satisfaction. Overall, from the findings of the study, it is evident that teaching quality has statistically significant impacts on student satisfaction. Therefore, enhancing the quality of teaching and learning in an educational institution becomes a principal factor of the increment in student satisfaction.

CONCLUSION

Maintaining and improving student satisfaction is considered an important goal of all educational institutions with the assumption that the satisfaction is indicative of institutional effectiveness. A key factor of students' satisfaction is the quality of teaching and learning which was addressed in this study. Findings of this study show that teaching quality has statistically significant impact on student satisfaction. More specifically, students' learning outcome was the best predictor of students' satisfaction followed by proper management of class time, fair grading system of the teacher, course outline, friendly interaction with students and teaching method. It is important for educators to continuously improve and develop their competencies particularly on teaching. So, educational institutions at all levels in Bangladesh have to adopt a sustainable culture of providing quality teaching and better learning that will increase the level of satisfaction among the students.

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A Study of Organisational Commitment among School Teachers

Aradhana Sethi

ABSTRACT

The present study aims to find out the Organizational Commitment among school teachers. The sample of the study comprised of 74 teachers (34 male and 40 female) teaching senior secondary classes of Tehri district of Uttarakhand state. To measure the organizational commitment of school teachers, organizational commitment scale (OCS) developed by Dr. Anukool M. Hyde was used. The result of the study indicated that Govt. and Pvt. School teachers were not found significantly different in their organizational commitment, whereas significant difference was found in the organizational commitment of male and female teachers. Female teachers had more organizational commitment in the comparison with male teachers. It was revealed through the study that maximum teachers found with low organisational commitment.

Keywords: Commitment, Organisational, School, Teachers

The credit of introducing organisational commitment goes to Mowday in 1982. Organizational commitment is an attitude about employee's faithfulness towards their organization. It shows an individual's identification and attachment to an organisation. Organisational commitment is a measure of the employee's willingness to remain with an organisation in future also. In fact organisational commitment binds an employee towards his/her organisation like a strong magnetic force. Organisationally committed employees do not change their job. A highly committee employee will probably see himself as a true member of the organisation. High organisational commitment is usually found in long term employees and those who have achieved personal growth and success in the organisation. It can be observed by the job related behaviour of the individuals.

According to Fred Luthans (as cited in Khanka, 2003) "Organizational commitment is an attitude reflecting employees' loyalty to their organisation and is an ongoing process through which organisational participants express their concern for the organization and its continued success and well- being."

It can be said that organisational commitment shows an individual's attachment towards the organization. A highly committed person will probably see oneself as a true member of the organization e.g. referring to the organization in personal terms such as "We provide job placement to all our students"). Such people overlook miner issues of dissatisfaction, and see

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themselves as the part of organization. While on the other hand, an employee who is less committed likely to see himself as an outsider e.g. referring to the organization in less personal terms like "they don't pay their employees very well"), to criticize the organisation, to express more discontentment about things, and don't see themselves as a long-term member of the organization.

CHARACTERSTICS OF ORGANISATIONAL COMMITMENT AS A TRAIT

1. Organisational commitment is the individual psychological attachment to the organisation.

2. Organisational commitment reflects the strength of the bond which employees feel towards their organisation.

3. It often reflects the employees' belief in the mission and goals of the organisation.

4. It is in fact an attitude reflecting employee's loyalty to their organisation.

5. Organisational commitment shows a feeling of involvement in organisational duties.

6. Intrinsic rewards are especially important for the development of organisational commitment.

7. Organisational commitment can be measured by the degree to which an employee fulfils his/her job responsibilities.

8. Organisational commitment implies employee's determination of whether to stay or not stay in the organisation.

NEED AND SIGNIFICANCE OF THE STUDY

The teachers are expected to transform an individual into a person of imagination, wisdom, human love and enlightenment; the institutions into lampposts for the posterity and the country into a learning society. They are also supposed to significantly contribute towards preparing their students as role performers in different walks of life. To fulfil these expectations, teachers need to maintain their personal commitment to the job and to the institution. In the present scenario, it has been seen that most of the teachers have become weak link in our educational chain. They are the butt of public criticism today for their, professional performance, lack of accountability and absence of commitment. They have been criticized by administrators, policy makers, parents, society members as well as by students. In such circumstances, Organisational commitment is a key concern in the education system because it promotes organisational effectiveness. It has been seen by reviewing literature that some studies regarding organisational commitment have been done on primary and secondary school teachers i.e. Joolideh and Yeshodhara (2008); Mishra (2011); Gupta and Gehlawad (2013); Nyugen (2013); Gehlawat (2013); Selamat and Nordin (2014) but the researcher found that very few studies have been done which studied organisational commitment of teachers teaching senior secondary classes. So the researcher decided to study the organisational commitment of senior secondary school teachers.

STATEMENT OF THE PROBLEM

A study of organisational commitment among school teachers.

OBJECTIVES OF THE STUDY

1. To study the organisational commitment of teachers with reference to their gender (male and female).

2. To study the organisational commitment of teachers with reference to type of school (government and private).

Hypotheses

1. There is no significant difference in the organisational commitment of male and female school teachers.

2. There is no significant difference in the organisational commitment of government and private schools teachers.

OPERATIONAL DEFINITIONS OF THE TERMS

Organisational commitment: In the present study Organisational commitments refer to the teacher's loyalty towards the organisation where they are working.

Type of school: In the present study, type of schools refers to government schools and private schools. Government schools are those which are run by Central Government and State Government of Uttarakhand whereas, private schools are those which are run by individuals, society and private organisations

METHOD OF THE STUDY

Descriptive survey research has been followed to conduct the study.

POPULATION AND SAMPLE

The population of the study consists of teachers teaching in senior secondary classes of Tehri district. The sample consisted of 74 teachers (34 males and 40 females) who are teaching in different schools of Tehri district. The sample was selected by using a simple random sampling technique.

The distribution of the finally selected sample is given in Table 1.

TOOLS USED IN THE STUDY

To measure the organisational commitment of school teachers, standardised organisational commitment scale (OCS) developed by Dr. Anukool M. Hyde and Mrs. Rishu Roy was used. This questionnaire consists of 30 questions, having split half reliability of .89 and high validity that is .94.

Table 1: Sample distribution

| Type of School	Number of Teachers	Gender		
		Male	**Female**	**Total**
Govt. school	40	18	22	40
Pvt. school	34	16	18	34
Total	**74**	**34**	**40**	**74**

STATISTICAL ANALYSIS

To analyse the raw scores of organisational commitment, mean, SD, t-test and % were used.

Hypothesis 1: There is no significant difference in the organisational commitment of male and female teachers.

Table 2: Mean, SD and t-value of Organisational commitment of male and female school teachers

Gender	N	Mean	SD	df	Table Value	t-value	Level of significance
Male	34	113.82	21.78	518	**1.964 (.05 level)**	3.135	Significant
Female	40	128.40	17.50		**2.58 (.01 level)**		
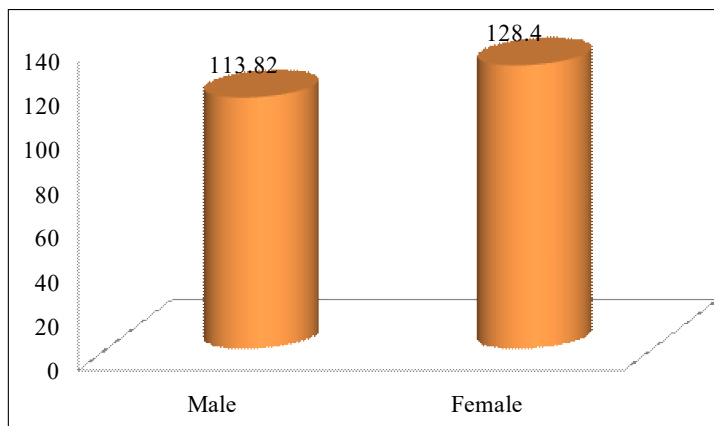
Graph 1: Mean value for Organisational Commitment of Male and Female Teachers
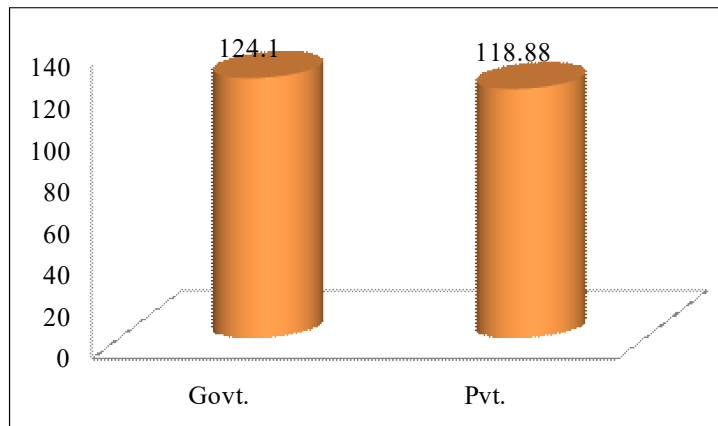
From Table 2 and Graph 1, it has been observed that mean score of organisational commitment of male teachers is 113.82 whereas mean score of organisational commitment of female teachers is 128.4. It is observed that SD of males is higher than that of females. Calculated t- value is 3.13 which is significant at .01 and .05 level. Thus hypothesis is rejected. Significant difference was found in the organisational commitment of male and female teachers.

Result: This hypothesis is not accepted. It means the organisational commitment of school teachers differ in relation to gender. Female teachers were found to have high organisational commitment in the comparison with male teachers.

Hypothesis 2: There is no significant difference in the organisational commitment of Pvt. and Govt. school teachers

Table 3: Mean, SD & t-value of Organizational commitment of Govt and Private school teachers

Type of school	N	Mean	SD	df	Table value	t-value	Level of Significance
Govt.	40	124.10	21.01	518	**1.964(.05 level)**	1.08	**Insignificant**
Private	34	118.88	20.44		**2.58(.01 level)**		

**Graph 2: Mean score of Organisational commitment among Govt. and Pvt. school teachers**

From Table 3 and Graph 2, it was observed that mean score of organisational commitment of Govt, and Pvt. school teachers is 124.1 and 118.88 respectively. It is observed that SD of Govt. school teachers is slightly higher than that of Pvt. School teachers. Calculated t- value is 1.08 which is not significant at .05 and .01 level of significance. Thus hypothesis is accepted that there is no significant difference in the organisational commitment of Govt. and Pvt. school teachers.

Result : This hypothesis is accepted. It means the organisational commitment of senior secondary school teachers is not found different in relation to type of school.

Table 4 and Graph 3 describe the different level of organisational commitment among teachers. 71% teachers have shown low level of organizational commitment, 18% teachers have displayed moderate organizational commitment whereas only 11% teachers have showed high organizational commitment

Table 4: Levels of Organisational commitment of school teachers

Levels of Organisational commitment	No. of Teachers (520)	Percent of teachers
Low	53	71%
Average	13	18%
High	8	11%
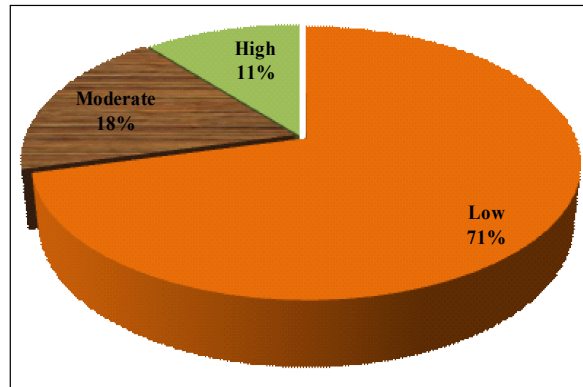
Graph 3: Levels of Organizational Commitment among school teachers

MAJOR FINDINGS

1. On the basis of analysis and interpretation of data, it has been observed that Govt. and Pvt. School teachers were not found significantly different in their organizational commitment. This is because government and private school teachers are under the same pressure to produce good result.

2. Significant difference was found in the organizational commitment of male and female teachers. Female teachers had more organisationally committed in comparison with male teachers.

4. It was revealed through the study that most teachers were found to have low organisational commitment.

EDUCATIONAL IMPLICATIONS

As teachers are the backbone of school system, they play a leading role in improving the entire system of the school organisation. This study may prove very useful at the time of recruitment of teachers as they may be assessed on the basis of their organisational commitment. Organisational commitment has become an issue of paramount concern as the organisations realize that their long term survival depends on the commitment of its members

The present study would be very beneficial for principals, school authorities, policy makers and administrators. Principals need to recognise that the feelings and perceptions of teachers about their schools, and their desire to attain opportunities for professional growth are beneficial to the organisation itself. School authorities should identify the ways and means through which teachers can be provided with facilitating work environment which will boost their job satisfaction and commitment to the organisation.

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Examining the Attitude of College and School Teachers towards Using New Technology of Teaching

Poonam Punia[1]* and Swati Bhardwaj[2]

ABSTRACT

Nowadays, things around us are changing at fast pace including teaching. The advent of new technology in teaching has changed the lives of teachers and students. As technology is more and more embedding in our lives, it becomes necessary for the teachers to have right attitude towards using new technology in teaching to make teaching more meaningful in this changing era. The study was conducted to examine the attitude of college and school teachers towards using new technology of teaching. The study participants included 200 teachers, out of which 100 were from schools and 100 were from colleges of Panipat district, Haryana. The sample was drawn on the basis of random sampling. Standardised test named 'Teacher's Attitude Scale towards New Technology' prepared by Dr. S. Rajasekar was used for the collection of data. The results of the study indicated that most of the college and school teachers showed average favourable attitude towards using new technology of teaching. No significant difference was observed in the attitude of school and college teachers towards using new technology of teaching. Further, male and female teachers were not different in their attitude towards new technology. Significant interaction effect of gender and level teaching was observed on the attitude towards using new technology. However, no main effect was established. The implications of the study lie in the fact that it may help the policy makers, stakeholders and administrators in taking decision regarding use of information and communication technology and framing new policies.

Keywords: Attitude, College teacher, School teacher, New technology of teaching, Information communication technology, Attitude towards new technology of teaching

In today's knowledge-based society, we are exposed to many new technologies in almost every walk of our lives. The world of education is also influenced by the growing use of information and communication technology (ICT) in teaching for enriching the goals of education. Friedman (2006) highlighted the importance of ICT in teaching; however, effective use of ICT is a complex process which needs time and institutional support (Donnelly, 2010). Stark *et al.* (2000). Simposon *et al.* (1999) found that the use of new technologies improved motivations, enhanced learning and teaching, improved efficiency and feeling of independence. Technology has become an integral part of teaching, and there is a need of redefining the role of teachers. Kizilkaya and Usluel (2007) are of the view that ICT integration in teaching–

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learning process helps both teachers as well as students and helps them in achieving top level of thinking ability. So, teachers must prepare themselves and keep up with the changes by updating their skills and keeping pace with technological advancements. ICT can be used as tool for both knowledge accumulation and dissemination. Hence, teacher is expected to infuse the knowledge of new technology to make learning more effective. Teachers' roles and responsibilities have been modified to a great extent in today's knowledge society (Uysal *et al.,* 2007).

Understanding teachers' beliefs and attitudes towards ICT is the first step to be done as they are the ones who will use and implement its application (Donnelly, 2010). Many studies have been conducted in this area, and most of the studies highlight that teachers' attitudes play an important role in teaching content through ICT. Teachers' positive attitude towards ICT has been found as the key factor for using new technologies in class and a way of avoiding resistance to computer use (Abas, n.d. and Watson, 1998). Isleem (2003) found positive relationship between teachers' attitude towards ICT and its use in the classroom. Mehra and Newa (2009) reported that most of the teachers showed positive attitude for ICT. Kersain *et al.* (2003) reported that teachers with positive attitude towards ICT usually incorporate it in their teaching and feel more comfortable. Regina, Grozman and Ticzon (2004), found that older teachers were more afraid of using technology than younger. Before incorporating ICT, it is very much relevant to know the attitude of the teachers towards ICT (Shaunessy, 2007). Understanding teachers' attitude is the way of predicting behaviours which are related with integration of ICT in the classrooms (Shaft *et al.*, 2004). Askar and Olkun (2005) asserted that significant difference has been found among the teachers on the basis of their age, level of teaching and period of ICT usage. They (2005) found that use of ICT affects the quality of teaching. Baylor and Ritchie (2002) were of the view that skill, knowledge and attitude are necessary to be infused in the curriculum. Roblyer and Edwards (2000) suggested five reasons for teachers to use technology in education. These are motivation, high productivity of the teachers, essential skill of information, distinctive instructional abilities and support for new teaching techniques. Teachers' views regarding the future scope of ICT in education were explored by Sahoo and Yadav (2003), and they found that majority of teachers agreed that ICT would occupy a major place in education system by 2010. Most of the studies highlight that teaching attitudes play an essential role in teaching.

OBSTACLES IN THE WAY OF ICT INTEGRATION

Although ICT offers enormous opportunities of making positive and significant changes in the lives and education of people, however, all this is accompanied with several challenges and obstacles. A number of challenges come in the way of teachers, policy makers and administrators in terms of infrastructure, planning, financing, curriculum and pedagogy. Other than these, capacity building is the key challenge often faced in terms of professional development of teachers. Prasad *et al.* (2015) found that lack of ICT, integration and lack of connectivity are

the most critical barriers in secondary schools of India. They extracted three most essential factors as potent barriers from factor analysis: lack of support, lack of ICT infrastructure and lack of motivation. Bullock (2004) suggested that teachers' attitude is the major enabling and disabling factors in the adoption of technology. Research in the area of use of ICT in different educational settings suggests that the inability of teachers in understanding the exact use of ICT and their anxiety of being replaced with technology are the most significant barriers in its success. Further, evolving field of ICT demands continuous upgradation of their knowledge even from the part of ICT fluent teachers. This suggests that ICT integration in the curriculum stipulates lots of beforehand planning in different areas, because it is not only the use of technology that matters, but also how to use is equally important. Nikolopoulou and Gialamas (2013) asserted that barriers must be identified before taking actions. Sabaliauska and Pukelis (2004) highlighted that ICT integration is a complicated process which has to face many barriers.

OBJECTIVES

Most of the review studies indicate that both ICT use and teachers' attitude are related with each other; hence, it is important to understand teachers' attitude before incorporating ICT in education. Bearing this in mind, this research work aims at (1) studying attitude of teachers towards new technology at college level and school level and (2) understanding the interactive and main effects of gender and level of teaching on the teachers' attitude.

METHODOLOGY

Sample of 200 teachers was taken on the basis of random sampling from Panipat district, Haryana. Out of 200 teachers, 100 were taken from schools and other 100 were teaching in colleges. Dr. Rajasekar's standardised test named, 'Attitude of Teachers towards using New Technology of Teaching' was used for assessing the attitude of teachers.

FINDINGS

The mean score value of attitude towards new technology of school teachers was 134.92 which was slightly higher than mean value of college teachers (132.4). This indicated that school teachers had more favourable attitude towards using new technology of teaching. However, t value (1.48) came out to be non-significant statistically. It was found that female teachers ($X = 135.09$) showed more favourable attitude than male counterpart, but the difference was insignificant ($t = 1.69$).

Further, ANOVA summary displayed in Table 1 indicated that the value of Levene's Test of Equality of Error Variances came out to be insignificant ($F(3,196) = 1.72, p = .163$), indicating that variances of attitude were equal across the group, thereby ensuring the assumption of homogeneity of variances. Further, two-way ANOVA was applied to explore the impact of gender and level of teaching on teachers' attitude towards new technology, the summary of which is presented in Table 1.

Table 1: ANOVA summary of the effect of gender and level of teaching on attitude of teachers towards new technology to teaching (*N* = 200)

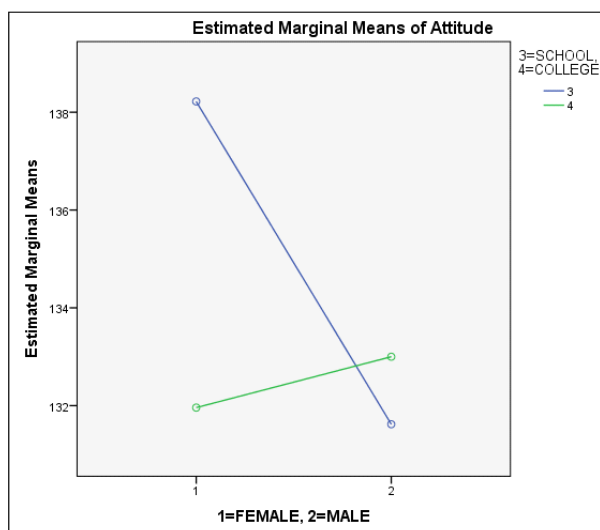| Source	df	F	Sig.	Partial Eta–Squared	Remarks
Gender	1	2.965	.087	.015	Not significant
Level	1	2.284	.132	.012	Not significant
Gender * level	1	5.598	.019	.028	Significant
Error	196				
Total	200				
Corrected total	199				

Figure 1: Effect of Gender and level of teaching on the attitude of teachers

From the result given in Table 1, it can be inferred that *F*-ratio value (5.59) for interaction of gender and level teaching came out to be significant at .05 level of significance. Further, the slope of lines shown in Figure 1 showed significant ordinal interaction t, indicating that both the factors (gender and level of teaching) had combined effect on the dependent variable (attitude towards new technology of teaching). In the light of these findings, main effects for independent variables were interpreted. The main effect of gender (*F* (1,196) = 2.9, *p* =.087) and level of teaching (*F* (1,196) = 2.2, *p* =.132) did not reach to the statistical difference. Hence, no main effects were established.

DISCUSSION AND CONCLUSION

It can be inferred from the above analysis that attitude of both college and school teachers towards using new technology of teaching was moderately favourable. However, the findings are not homogenous. It also confirms that teachers believe that new technology can be used as a good tool of teaching, although some teachers also had many apprehensions regarding its usage. No significant differences were found on the basis of gender and level of teaching. Hence, both college and school teachers were not different in their attitudes. Further, results obtained from two-way ANOVA established significant interactive effect of gender and level of teaching on the attitude of teachers. This suggests that attitude of teachers towards new technology is not affected by the gender and level of teaching.

Hence, the literature supports the inclusion of ICT in the classroom to make teaching learning more active and effective. Consequently, it can be concluded that ICT is very good tool in the hands of teaching if used with right attitude and support.

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A Study of Awareness of Human Rights Teachers at Secondary Level

Isha Gupta

ABSTRACT

In the present scenario, it is of prior importance to spread awareness about human rights. School being a miniature of the society shoulders a huge responsibility in promotion of awareness of human rights among the learners. For successful attainment of this objective, it is important for teachers to have knowledge about human rights. The investigator conducted a survey on a sample of 60 teachers at secondary level about the awareness of human rights. A self-designed questionnaire was used by the investigator for collection of data.

Keywords: Awareness, Human Rights, Teachers

INTRODUCTION

'All human beings are born free and equal in dignity and rights' – Article 1 of the United Nations Universal Declaration of Human Rights.

Human rights are moral principles or norms that describe certain standards of human behaviour and are regularly protected as legal rights in national and international law. They are commonly understood as inalienable fundamental rights 'to which a person is inherently entitled simply because she or he is a human being' and which are 'inherent in all human beings' regardless of their nation, location, religion , ethnic origin or any other status.

Former UN Secretary General U. Thant had said 'The establishment of human rights provided the foundation upon which rests the political structure of human freedom; the achievement of human freedom generates the will as well as the capacity for economic and social progress; the attainment of economic and social progress provides the basis for true international peace'.

All men and women are equal partners in society and whose activities are centred on the social system. All human beings are equal with respect to rights and dignity. They are motivated with reason and conscience. The concept of human rights has originated out of human beings' reasoning and conscience. Every individual has the right to life, liberty and security which means that right to live and to live in freedom and safety is the fundamental right granted to individuals. It is the responsibility of every government to ensure protection of its citizens and their human rights.

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The Constitution of India gives paramount importance to human rights. The Constituent Assembly incorporated in the Constitution of India the substance of the right adopted by the General Assembly in the Universal Declaration of Human Rights. The Fundamental Rights include all Civil and Political rights such as right to equality, right to freedom, right against exploitation, right to freedom and religion among others. Fundamental Rights are different from human rights as the former cannot be abridged by any law, ordinance, custom or administrative order. In India, the Judiciary performs the function of safeguarding human rights by innovative interpretation and application of the human rights provision of the Constitution.

The National Human Rights Commission (NHRC) came into existence in 1993 by virtue of the Protection of Human Rights Act, 1993. This Act provided for the Constitution of an NHRC, State Human Rights Commissions and Human Rights Courts for better protection of human rights. The main responsibility of NHRC is the implementation of human rights. The Commission has taken steps to promote literacy about human rights through publications, media, seminars among other various media.

Education is seen as a process for empowerment of people, which leads to the improvement of the quality of their lives. This enhances their capacity to participate in decision-making process, leading to desired transformation in the social, cultural and economic policies. The level of attainment of educational goals of a country leads to economic and social development. To achieve such goals, it is necessary to inculcate the values of human rights among the learners in the school environment.

As rightly said by Paulo Friere, 'To educate is to believe in change'.

Human Rights Education is a learning process that develops the knowledge, skills and values of human rights with the major goal of building a universal human rights culture. The United Nations adopted the World Program for Human Rights Education on 10 December 2004 mentioning the following benefits of Human Rights Education:

● Facilitates the effectiveness of the national education system.

● Enhancement of learning achievements by promotion of child centred, participatory teaching and learning practices and processes.

● Creation of rights-based learning environment which is inclusive leading to increase in access and participation in school.

● Contribution in social cohesion and conflict prevention by supporting emotional development of the child.

Schools have the potential to play a prominent role in implementation of Human Rights Education. The mutual respect between all stakeholders in the schools and classrooms facilitates in establishment of a congenial environment of promotion of human rights.

One of the most important roles of a teacher in teaching about human rights is promotion of respecting human rights in the classroom and school environment itself. The rules in the classroom and responsibilities can be delegated with the students. A connection can also be built between classroom and community by involving various members of the community such as students, education authorities, parents among others.

OBJECTIVES OF THE STUDY

The present investigation was conducted with the objective of assessing the level of awareness of human rights among the teachers at secondary level.

METHODOLOGY

Descriptive survey method was undertaken for conducting the present study of awareness about human rights among teachers at secondary level. For better analysis of data, both qualitative and quantitative analyses have been adopted. Graphical representation of the data has been depicted. The investigator used a self-constructed questionnaire for collection of data.

Sample: The stratified random sampling method was implemented by the researchers in selection of the sample of the teachers

The sample is of 60 teachers at secondary level of school.

FINDINGS AND DISCUSSIONS

Awareness of Basics of Fundamental and Human Rights

The main emphasis of the researcher was to enquire about the awareness about fundamental and human rights. The researcher found out that all the teachers, that is 100% of the teachers were aware about fundamental and human rights. Further, almost all teachers had some knowledge about all fundamental rights. In Figure 1, the number of teachers having information about various fundamental rights has been presented.
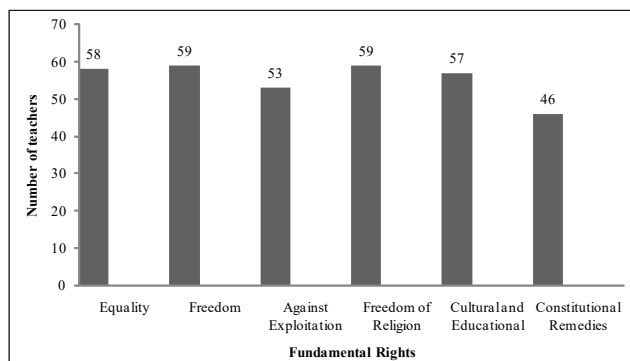

Figure 1: Graph representing awareness about fundamental rights

After assessing the knowledge of teachers about fundamental rights, the researchers wanted to verify whether the teachers had the information about human rights. Here by the term, awareness, researchers meant that if the teacher has heard or/read about the human rights or if the teacher had the knowledge or the concept of human rights. A percentage of 100 teachers had some ideas of the concept of human rights.

A percentage of 43 teachers stipulated the difference between fundamental and human rights. According to teachers, the fundamental rights are granted to the citizens of the country, and human rights are universal in nature. They also stated that fundamental rights are enforceable by law and human rights are the moral principles which are not under the ambit of law. Some were not confirmed about the exact difference. A percentage of 57 teachers stated that there exists no such difference between human and fundamental rights.

Awareness about the In-Depth Knowledge of Human Rights

The researchers asked the teachers about the media through which they were acquainted with human rights. The teacher stated that they had the knowledge about the human rights through the process of teaching about it in their classes in school. Some of them have studied about it during higher education programmes (other than teacher training courses), and some of the teachers had studied in their teacher-training programmes. They also listed outside agencies other than school, such as print and electronic media, as the source of information (Figure 2).

Further, it was enquired about the human rights of which the teachers had information. The teachers had the knowledge of some basic human rights, which they could relate with the fundamental rights enlisted in the Indian Constitution. The result has been presented in Table 1.
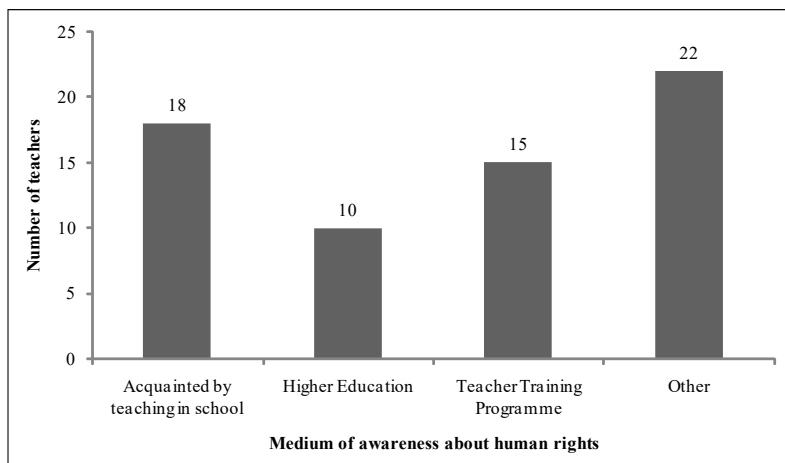

Figure 2: Graph representing medium for knowledge about human rights

Table 1: Percentage of teachers having information about the specified human right

Human Rights	Percentage of Teachers
Right to life, liberty and security of person	60
Freedom of slavery, torture, arbitrary arrest, detention or exile	45
Equality before law	45
Fundamental freedom of thought, conscience and religion, opinion and expression	40
Freedom of peaceful assembly and association	43
Right to take part in government of his/her country, directly or through freely chosen representatives	33
Right to work, equal pay for equal work	50
Right to an adequate standard of living	37
Right to education	53
Right to participate freely in cultural life	26

A percentage of 38 teachers had information about the Universal Declaration of Human Rights and 22% negated the existence of the document and 40% were not sure about the Universal Declaration of Human Rights document (Figure 3).

The researcher assessed the information among teachers about agencies which could redress the grievances regarding violations of human rights. 27% teachers enlisted NHRC, non-
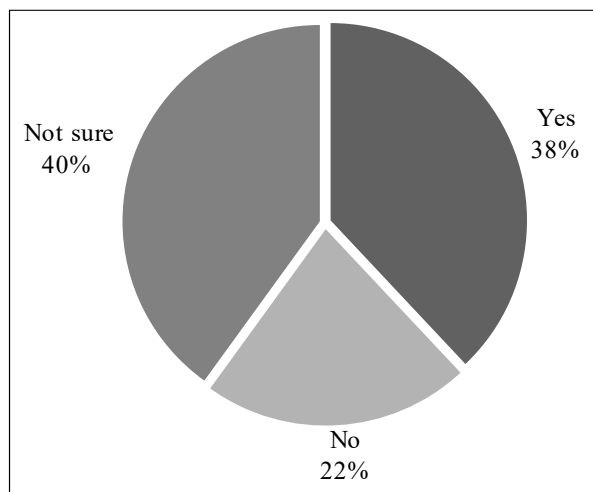
Figure 3: Graph representing the knowledge of teachers about UDHR

governmental organisations, judicial system and police authorities as the agencies for the redressal of grievances in the case of violation of human rights at national level. A percentage of 73 teachers did not possess any information about agencies for redressal of violations of human rights.

Information about Human Rights Education in Teacher Training Curriculum

The researchers enquired form the teachers about the presence of subject of human rights education in the curriculum of teacher-training programme. Almost 35% teachers replied in affirmation that they had a paper on human rights education and 65% teachers responded in negation of presence of the subject in their teacher-training programme.

CONCLUSION

Human rights education holds prime importance for every member of the society. For introduction of human rights education in the curricula at all levels of school, it is firstly required to educate teachers about them, so that they can efficiently transact them further to the students. The teacher training course should mandatorily have human rights education component in all of its courses. The daily school life can provide the suitable environment by reinforcing the fundamental concepts. The content regarding human rights should be emphasised among the students.

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Psychological Resilience of Secondary School Teachers with Respect to the Gender

K.R. Anil[1] and K.S. Sajan[2]*

ABSTRACT

Psychological resilience is an individual's ability to successfully adapt to life tasks in the face of social disadvantage or highly adverse conditions. It is one's ability to bounce back from a negative experience with competent functioning. As teaching is a profession and it needs skills and competency, psychological resilience for teachers is a must. A teacher needs to be active, and he/she should act according to the demands of the circumstances. A teacher has to face many adverse situations and to find effective solutions; only a resilient teacher can deal with these situations.

Keywords: Psychological resilience, Secondary school teachers, Adaptability, Vocational Commitment, Professional integrity, Teaching, Job stress

Education has a paramount importance in everybody's life so does the teacher. The role of teacher is also a constituent part of education. A teacher should be a guide, facilitator, friend, mentor and so on. In fact, they are shaping the future of the country. So, it is the responsibility of a teacher to understand each student and enhance their abilities and knowledge level. So, there are certain requirements for a good teacher. Brilliant teaching reflects scholarship, personal integrity and the ability to communicate with the students. Scholarship is both the grasp of a realm of knowledge and a habit of mind. Integrity implies characteristics of honesty, frankness, sincerity and the sense of self-confidence and personal identity a fine teacher exhibits. The ability to communicate with the students is the third characteristic of good teaching. It means, obviously, liking young people, enjoying their noisy exuberance and intense questioning, which is their process of growing up.

As far as a teacher is concerned, he is the architect of the destiny of the students. He is moulding the future of them in the classroom. No one can confine the role of a teacher to sheer lecturer. A teacher has to do many things, namely he may have to advise the students in that sense he is a counsellor, he may have to settle the disputes between pupils in that sense he is a judge, again he may have to apply some first aids to students and in that sense he is a doctor. So, it is necessary for a teacher to be everything that the children need to, because in school, there occurs the overall development of the student. Therefore, teaching is a multi-pronged

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activity. Teaching is an emotionally demanding work, and levels of work-related stress, anxiety and depression are higher within education than within many other occupational groups. Hence, psychological resilience is a must for teachers to deal different situations. Resilience is not simply an individual trait, but a capacity that arises through interactions between people within organisational contexts. Teachers' resilience can therefore be nurtured at various career stages through initial training, continuing professional development and support networks.

By psychological resilience, we mean that an individual's ability to properly adapt to stress and adversity. Stress and adversity can come in the shape of family or relationship problems, health problems or workplace and financial worries among others. Resilience is not a rare ability; in reality, it is found in the average individual, and it can be learned and developed by virtually anyone. Resilience should be considered a process rather than a trait to be had.

Teacher resilience is also role specific as it is closely associated with the strength and conviction of teachers' vocational commitment, and it is this inner calling to teach and commitment to serve, which distinguishes from teaching from many other jobs and occupations. Teacher resilience is the quality that enables teachers to maintain their commitment to teaching and teaching practices despite challenging conditions and recurring setbacks. The study aims at identifying whether there is any significant difference in the levels of psychological resilience possessed by female and male teachers.

REVIEW OF LITERATURE

Hunter and Chandler (1999) explored the gender differences on resilience in adolescents. They made use of Wagnild and Young's Resilience Scale (Wagnild and Young, 1993) to measure adolescents' perceptions of their resilience. It was found that the boys scored higher than girls on resilience scores.

Stewart and Sun (2004) examined the association between, first, student resiliency and their perceptions of social support from parents/caregivers, teachers and peers, and second, between student's perception of their general health status and their social support. A cross-sectional research project was designed and conducted in 2003 in an urban and remote area of Queensland, Australia. The study population comprised 2,580 students (years 3, 5 and 7) across 20 primary schools. The main outcome measures were self-reported health status and resiliency behaviours. Independent variables included student perceptions of support from parents/caregivers, teachers, school peers and pro-social groups. Students who perceived parents, teachers and peers as supportive were more likely to have higher resiliency behaviour in communication and cooperation, self-esteem, empathy, help-seeking, goals and aspirations. Students, who considered that their parents, peers at school and pro-social groups were supportive, were more likely to feel healthy. Findings suggest that providing adult and peer support to students at primary school age is a vital strategy in promoting student resiliency and general health for children of primary school age.

Patterson *et al.* (2004) investigated the strategies used by urban teachers to build their personal resilience. Sixteen resilient teachers from four urban districts that reported student achievement equal to or higher than the state average on standard tests of reading and mathematics were interviewed. A three-cycle interview process included pre-interview, interview and review by the respondent for accuracy. Standard qualitative methods were used in the analysis. Results revealed four key findings reported in this paper. (a) Resilient teachers act from a set of values that guides their professional decision-making. (b) They also place a high premium on professional development. (c) They provide mentoring to others and stay focused on students and their learning. (d) A teacher candidate who gives evidence of resilience of taking charge to solve problems and find opportunities may add to the school in important ways that bolster student achievement and school success.

Shehu and Mokgwathi (2008) in their study assessed the resilience and locus of control in adolescents. They explored the gender differences, and it was seen that females had significantly higher level resilience scores than males.

Wilks (2008) conducted a study to examine the relationship between academic stress and perceived resilience in social work students and also tried to determine social support as a protective element of resilience in the relation. The sample consisted of 314 social work students of USA. Results showed that the academic stress was negatively correlated with social support and resilience, whereas social support had a positive influence over resilience.

Miranda *et al.* (2012) conducted a study on healthy maternal bonding as a resilience factor for depressive disorder. The researchers in their empirical study found that a significant negative correlation of depressive disorders with an affective maternal bonding. The result suggests that women who have a healthy attachment with mothers didn't develop depressive disorders even after undergoing pre-mature childbirth.

Celik (2013) administered a study to reveal whether university students' level of resilience differ by gender and attitude towards grief and also to identify to what extent the resilience predicts the attitude towards grief. A total of 259 students of Ondokuz Mayis University participated in the study. The Attitude to Grief Scale was administered to identify attitudes towards grief, and the resilience scale was administered to identify resilience. From the findings, it is evident that the resilience is related to grief. Resilience was found to be a significant predictor of attitude towards grief. The results of the study revealed that the resilience scores of the students did not significantly differ by gender.

Isaacs (2014) conducted a study to determine the differences in the levels of resilience characteristics among male and female university deans in a state university system. Personal resilience questionnaire was administered to obtain data from the sample. A total of 35 deans responded to the questionnaire; in that 16 were males and 19 were females. According to the result, the average mean score suggested that female deans had a higher level of resilience.

OPERATIONAL DEFINITION OF KEY TERMS

Psychological Resilience

Psychological resilience is defined as an individual's ability to adapt to stress and adversity. Stress and adversity can come in the shape of family or relationship problems, health problems or financial stresses among others. Resilience should be considered a process, rather than a trait to be had. People who demonstrate resilience are people with positive emotionality; they are keen to effectively balance negative emotions with positive ones. Positive relationships aid in fostering a person's resilience. Resilience is generally thought of as a positive adaptation after a stressful or adverse situation. It means one's ability to bounce back from a negative experience.

Secondary School Teachers

For the present study, secondary school teachers imply the teachers of class VII, IX and X of secondary schools.

Objectives

- To find out the level of psychological resilience among secondary school teachers
- To find out the significant difference in psychological resilience among secondary school teachers classified on the basis of gender

Hypotheses

- There exist different levels of psychological resilience among secondary school teachers
- There exist significant difference in psychological resilience among secondary school teachers classified on the basis of gender

METHODOLOGY OF THE STUDY

It deals with the precise description of the method adopted, sample taken for the study, tools and statistical techniques used.

Method of the Study

In the present study, the investigator has used the survey method, which seemed to be most appropriate for finding out the level of psychological resilience among secondary school teachers based on their gender.

Sample

The present study is intended to conduct on secondary school teachers in Palakkad district of Kerala. The sample was selected using simple random sampling due representation to both genders.

Tool Used

A psychological resilience scale has been developed with the help of the supervising teacher to collect data from secondary school teacher.

Data Collection

For this study, the investigator visited different secondary schools in the Palakkad district and sought the permission of the authorities to administer the tool. With the permission of school management and authorities, the test was administered on secondary school teachers. They were introduced with main objectives of the study and requested to give responses truthfully, assuring that their responses would be kept confidentially.

ANALYSIS AND INTERPRETATION

Levels of Psychological Resilience among Secondary School Teachers

The first objective of the study is about the different levels of psychological resilience among secondary school teachers. Accordingly, 275 secondary school teachers were taken in to account, and the statistical analysis was done. The data are represented in Table 1.

Table 1: Number and percentage of secondary school teachers with respect to levels of psychological resilience

Variable	Group	Norms	n	%
Psychological resilience	High	$>M+SD$	49	18
	Average	Between M - SD and $M+SD$	183	66
	Low	$<M$ - SD	43	16
	Total		275	100

Table 1 shows the levels of psychological resilience among secondary school teachers. It can be deciphered from Table 1 that 18% of the secondary school teachers have high level of psychological resilience, 66% of secondary school teachers have average level of psychological resilience and 16% of the secondary school teachers have the low level of psychological resilience.

It is clear from the percentage analysis that there are different levels of psychological resilience among secondary school teachers. Three different levels (high, average and low) of psychological resilience were identified by the investigator. Therefore, the hypothesis that states that there exist different levels of psychological resilience among secondary school teachers is accepted.

Significance of Difference in the Scores of Psychological Resilience of Female and Male Teachers

To find out whether there exists any significant difference in the mean scores of psychological

resilience among secondary school teachers on the basis of gender, test of significance of difference (*t*-test) was employed. The result of the statistical analysis is presented in Table 2.

Table 2: Test of significance of difference in the scores of psychological resilience of female and male secondary school teachers

Variable	Gender	*n*	*M*	SD	*t*	*p*
Psychological resilience	Female	233	156.26	20.94	.755	.451
	Male	42	153.54	24.32		

It is clear from Table 2 that the mean and standard deviation of the female secondary school teacher are 156.26 and 20.94, respectively. Male secondary school teachers obtained 153.54 as the mean score and 24.32 as the standard deviations. The *t* value is .755 and the *p* value is .451 which is greater than .05. It is obvious from this that the female and male teachers do not significantly differ in their psychological resilience.

Hence, the hypothesis stating that there exists significant difference in psychological resilience among secondary school teachers classified on the basis of gender is rejected.

Findings

- There exist different levels of psychological resilience among secondary school teachers.

- From the result, it has been found that there exists no significant difference between female and male secondary school teachers in their psychological resilience.

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Role of School Management for Improving Life Skills of Secondary Students of Different Subject Streams

Malvinder Ahuja

ABSTRACT

The present study was conducted to investigate into the role of school management, that is government and private schools in promoting life skills of secondary school students from various subject streams. A sample of 150 students of XI grades was drawn from the representative secondary schools of Chandigarh. Four life skills were selected to be studied, namely decision-making, problem solving, critical thinking and communication skills. A 2×2 ANOVA test was applied on scores of each skill separately. The major findings of the study were

- *Secondary students of arts, commerce and science stream were equal in their skill of decision-making, skill of problem solving and skill of critical thinking.*

- *Science students and commerce students were equal in skill of critical thinking and possessed higher order critical thinking than those in arts streams.*

- *Science and commerce students of government schools were higher on skill of decision-making as compared with their counterparts of private schools.*

- *Students of private schools were higher in skill of problem solving as compared with those of government schools.*

- *Secondary students studying in government and private schools were equal in skill of communication and skill of critical thinking.*

- *There is no significant difference in the skill of decision-making, skill of problem solving and skill of critical thinking of secondary students due to the interaction between school management and subject streams.*

- *There is significant difference in communication skill of secondary students due to the interaction between school management and subject streams. Students of only commerce stream studying in private schools had higher communication skills as compared with students of all other combination groups.*

Keywords: Life skills, Decision-making, Problem solving, Critical thinking, Communication

LIFE SKILLS

The cardinal aim of all societies and their government is to ensure the fullest development of the human personality. The right to live is the natural right of human beings but to live with

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dignity is equally important as well. This realisation is the outcomes of the efforts of several national and international organisations which have ceaselessly striven to secure all human beings the right to live with dignity on earth.

Life skills are a set of human skills acquired via direct experience or teaching that are used to handle problems and questions commonly encountered in life.

WHO (1999) defined life skills as the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life. They are abilities that facilitate the physical, mental and emotional well-being of an individual.

UNICEF defines life skills as 'a behaviour change or behaviour development approach designed to address a balance of three areas: knowledge, attitude and skills'.

A lifelong basic education must be based on four pillars of education as stated in the UNESCO's Dalor report: Learning: The treasure within (1996) are 'learning to know', 'learning to do', 'learning to live together' and 'learning to be'.

UNICEF, UNESCO and WHO list the 10 core life skills which are further segregated into three core groups. These are
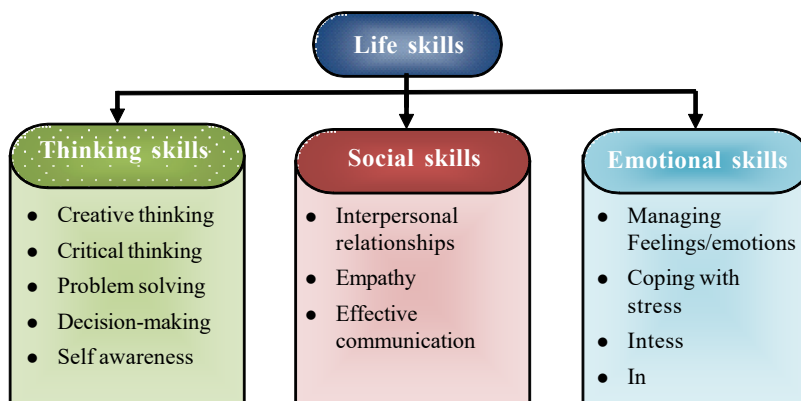
In the present study, three thinking skills and one social skill have been selected which seem to be crucial for secondary school students. These are

Skill of critical thinking: It is an ability to analyse information and experiences in an objective manner. Critical thinking can contribute by helping us to recognise and assess the factors that influence attitudes and behaviour, such as values, peer-pressure and the media.

Skill of decision-making: It helps us to deal constructively with decisions about our lives. This can have positive consequences for the health of young people when they actively make

decisions about their own health practices by assessing different options and the effects of different decisions.

Skill of problem solving: It enables us to deal constructively with problems in our lives. Significant problems that are left unresolved can cause mental stress and give rise to accompanying physical strain.

Skill of communication: Communication skills include verbal/non-verbal communication, active listening and expressing feelings, positive and negative both without blaming, receiving feedback and giving feedback.

The various life skills work best in conjunction. Many life skills are required to manage a particular situation and cope with it effectively. One particular skill may be effectively utilised in diverse situations. The appropriate combination of life skills at a given moment is an art, and adolescents learn their life skills from parents, teachers and their role models.

Research review reveals that Hamburg (1990) dealt with essential life skills for young adolescents. Attention was given to school-based interventions, including interpersonal problem solving, social competence training, drug and alcohol project, linked school and community programmes. Concluding remark focused on the need for dissemination of information about effective life skills, training and recommendations for implementation of preventive programmes in middle schools. U.S., Alabama (1993) prepared life skills curriculum, grades 7–12 for drug-free schools and communities programme through teachers, including case studies quizzes, self-assessment instruments, exercises, lesson plants and helpful hints. Topics covered include stress management, conflict management, improving communication skills, self-esteem, values, career, and life-planning skills and decision-making.

Halter and Lang (1994) were designed to help adolescents develop skills which will encourage them to make health and positive choices about life. The book uses a series of written exercises designed to help organise the students' goals and aspirations for life. Smith and Martin (1997) focused on life skills training and cross-age teaching of younger students. Parents reported that communication with their children about the programme increased knowledge about life skills, support from school and empowerment; and greater strengths in their children. Coffey and Knoll (1998) presented the general purpose of life skills programme to help person to live more successfully and to function better in their multiple roles as members of a family, community and workforce. Life skills training was treated as an educational programme emphasising the world of work, practical living skills, personal growth and management and social interpersonal skills.

Rooth (2000) studied the enhanced relationship between participants in life-skill courses and the environment, human needs resources and the environment publication series. The research concluded that there are advantages of intervention grinded in experimental learning, and those

participants in life-skill course developed enhanced self-perceptions and were more empowered. Richard (2002) studied to predict social problem-solving skills of adolescents: the role differentiation of self and attachment security. Furthermore, mother–child displayed a significant unique influence with the process which was found to be significantly associated with the familial variables: problem orientation and evaluation.

West (2003) studied contextual variability in the transfer of problem-solving skills. The purpose of this study was to describe how individuals learn from examples and retrieve known problems to help solve new ones. Solvers who did not receive contextual variability in training but solved a simple transfer problem showed improved transfer and recognition of embedded principles.

Many studies confirm these results, such as mastery learning with feedback correctives proved to improve skill of decision-making by Sharma (2006); Mraz (2012) found the significant impact of the symphonological approach to ethical decision-making on advanced level nursing students. Meena (2006) in her study reported that students of BTMC achieved higher gain means than those studying in conventional group learning on skill of acquiring knowledge, skill of critical thinking, skill of decision-making and communication skills.

Malhan (2011) concluded that mean gain scores of students taught through hybrid instructional model in cooperative learning situations were significantly high for skill of decision-making as compared with the students taught through cooperative learning and conventional method. In one of the studies (Lee *et al.*, 2012), it was found that components of meta-cognition such as regulation of cognition and knowledge of cognition enhance children's monetary decision-making process.

SCHOOL MANAGEMENT

Nowadays, every parent wants their children to study in private schools as they are providing the best study materials and scopes to learn and get more. Government schools' charm is getting faded due to non-availably of study materials and even teachers are not showing their interest. Children of government school always complain about teaching against not giving proper attention to the children and even they are always being busy in staff room and their personal chat. The people from the middle class and lower than that can't take admission in private school as they take high donations.

Private schools also known as independent schools or non-state schools are not administered by local, state or national governments; thus, they retain the right to select their students and are funded in whole or in part by charging their students' tuition rather than relying on public (government) funding; students can get a scholarship into a private school which makes the cost cheaper; depending on a talent, the student may have the scholarship, for example sport scholarship, art scholarship, academic scholarship and so on. In several Commonwealth countries, the use of the term is generally restricted to primary and secondary educational levels; it is almost never used for universities and other tertiary institutions. Private education

in North America covers the whole gamut of educational activity, ranging from pre-school to tertiary level institutions.

Concept of private schools in India was dominant up to school education till a few years, but now the idea has been picked up by various agencies to impart education till university level through private institutions which are mostly self-financed. Hence, present investigation was focused around government-run schools and private schools run by private managements.

SUBJECT STREAMS

At the secondary level, there are mainly three streams of education: arts, commerce and science. It is a common observation that the learning outcomes of students coming from these streams are different because of the subject contents – their approach to learning, methodology of instruction and even outlook towards life. This choice of subject stream at +2 stage is very crucial. Many times students opt for wrong choice not considering their abilities, their goal of life, the skills they possess. Sometimes they are under pressure from parents, friends or their role models and choose subjects for which they are not equipped. As a result, they face failure. Currently there has been stress on life-skill training in educational institutions so that students become aware of their own capacities. It was the current concern that the investigators designed to study life skills of secondary students from different subjects are from private as well as government schools.

OBJECTIVES

The study was carried out with following objectives:

- To study the significance of difference in skills of decision-making, problem solving, critical thinking and skill of communication among XI graders studying in government and private schools.

- To study the significance of difference in skills of decision-making, problem solving, critical thinking and skill of communication among XI graders arts, commerce and science streams.

- To study the significance of difference due to interaction effect of school management and subject streams on the skills of decision-making, problem solving, critical thinking and skill of communication among XI graders.

HYPOTHESES

H_1 – There will be no significant difference in decision-making skill of XI graders studying in arts, commerce and science stream.

H_2 – There will be no significant difference in the decision-making skill of XI graders studying in government and private schools.

H_3 – There will be no significant difference in the decision-making skill of XI graders due to the interaction between school management and subject streams.

H_4 – There will be no significant difference in problem-solving skill of XI graders studying in arts, commerce and science stream.

H_5 – There will be no significant difference in the problem-solving skill of XI graders studying in government and private schools.

H_6 – There will be no significant difference in the problem-solving skill of XI graders due to the interaction between school management and subject streams.

H_7 – There will be no significant difference in the communication skill of XI graders studying in arts, commerce and science stream.

H_8 – There will be no significant difference in communication skill of XI graders studying in government and private schools.

H_9 – There will be no significant difference in the communication skill of XI graders due to the interaction between school management and subject streams.

H_{10} – There will be no significant difference in the critical thinking skill of XI graders studying in arts, commerce and science stream.

H_{11} – There will be no significant difference in the critical thinking skill of XI graders studying in government and private schools.

H_{12} – There will be no significant difference in the critical thinking skill of XI graders due to the interaction between school management and subject streams.

TOOLS USED

The following tools were used in the present investigation:

Tool for decision-making skill: The scale was designed and developed by Kant Davis and Davis Gowvell (1999). The scale of decision-making skill was a three-point scale having 12 questions. Students have to answer the questions according to their decision-making approach.

Tool for problem-solving skill: The scale for skill of problem solving was designed and developed by Wills and Sahiffman (1985). The scale of problem-solving skill was a five-point scale having 13 questions that includes Always (A), Almost Always (AA), Sometimes (S), Always Never (AN) and Never (N). Students have to answer the questions by critically analysing each statement for self and tick on the scale.

Tool for communication skill: The scale for skill of problem solving was designed and developed by Wills and Sahiffman (1985). The scale of communication skill was a five-point

scale having 13 questions that includes Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD). Students have to answer the questions by critical analysing each statement for self and tick on the scale.

Tool for critical thinking: The test was designed and developed by Baqer Mehdi (1986). It provides three-factor scores – fluency, flexibility and originality for classes VII and VIII. The need for developing tests which would be specifically relevant to a given culture is therefore obvious. The present battery is an attempt to meet this need. The battery is meant to identify critical thinking of the students at all stages.

ANALYSIS AND INTERPRETATION OF DATA

The raw scores obtained with the help of tools were treated statistically to analyse the results and interpret them meaningfully and scientifically.

Descriptive statistics as mean, S.D.s were worked out to ascertain the nature of distribution of scores for the four selected life skills, that is decision-making, problem solving, communication and critical thinking, which have been presented in Table 1.

Table 1: Mean, S.D., skewness and kurtosis of scores for four selected life skills

Skills	Means	S.D.	Variance	Skewness	Kurtosis	*N*
Decision-making	29.0600	2.47736	6.137	-0.158	1.891	150
Problem solving	43.2267	7.02550	49.358	-0.284	0.080	150
Communication	47.1800	6.05907	36.712	-0.247	-0.286	150
Critical thinking	39.6933	6.03452	36.415	-0.162	-0.287	150

Table 1 reveals that the scores on all the four selected life skills showed variations in their means, S.D. and variance. The distribution of scores too was negatively skewed for all the skills. The table also reveals that for decision-making and problem solving, kurtosis of scores was positive, and scores of skills of critical thinking and communication showed negative kurtosis.

Inferential statistics like 2 × 2 ANOVA was used to find the significant difference in mean scores of selected four life skills of XI graders in relation to school management and subject streams. A 2×2 factorial design was employed to analyse the data.

2 × 2 ANOVA ON SCORES OF SKILL OF DECISION-MAKING

The sum of squares, degree and *F*-ratio for the main effects of subject streams and school management along with their interaction effect on scores of skill of decision-making are given below. The summary of 2 × 2 ANOVA has been presented in Table 2.

Table 2: Summary table of 2×2 ANOVA on scores of skill of decision-making

Source of Variation	Sum of square	df	Mean sum of square	*F* Ratio
Subject streams	18.280	2	9.140	1.563
School management	41.607	1	41.607	7.114**
Subject stream × school management	12.413	2	6.207	1.061
Error term	842.073	144	5.8477	
Total	914.373	149		

*significant at .05 level; **significant at .01 level of confidence

Main Effects – Subject Streams

Table 2 shows that the *F*-ratio for the difference in the means of decision-making skill by arts, commerce and science students was 1.563 which was not found to be significant at 0.05 level of significance. This indicates that subject streams do not contribute significantly in the development of decision-making skills of the students. Thus, the null hypothesis, H.1, was not rejected at the specified level. This led to conclude that decision-making skills of secondary students studying in arts, commerce and science stream were not different.

Main Effect– School Management

Table 2 shows that the *F*-ratio for the difference in the means of decision-making skill by government and private school students was found to be 7.114 which was found to be significant at 0.01 level of significance. It may be inferred that these types of schools – government or private – contribute significantly to the development of decision-making skills of the students. Thus, the null hypothesis, H_2, was rejected at the specified level, thus leading to a conclusion that secondary students of government and private schools differ in their skill of decision-making. An examination of their respective means suggested that government school students were higher on skill of decision-making as compared with their counterparts of private schools.

Interaction Effect

Subject Streams × School Management

Table 2 shows that the *F*-ratio for the difference in the means of decision-making skill due to the interaction effect of subject streams and school management was 1.061 which was not found to be significant at 0.05 level of confidence. This means that there is no interaction between subject streams and school management to affect decision-making skill of secondary students and thus the null hypothesis, H_3, was not rejected. It leads to conclude that decision-making skill of secondary students was not different due to the interaction effect of subject streams and school management.

2×2 ANOVA ON SCORES OF SKILL OF PROBLEM SOLVING

The sum of squares, degree and *F*-ratio for the main effects of subject streams and school management along with their interaction effect on scores of skill of problem solving are given in Table 3.

Main Effects – Subject Streams

Table 3 shows that the *F*-ratio for the difference in the means of problem-solving skill by arts, commerce and science students was found to be 1.651 which was not found to be significant at 0.05 level of significance. This means that subject streams does not contribute significantly in the development of problem-solving skill of the students. Thus, the null hypothesis, H_4, was accepted. It may be concluded that students of arts, commerce and science were equal in their skill of problem solving.

Main Effect– School Management

Table 3 shows that the *F*-ratio for the difference in the means of problem-solving skill by government and private school students was 13.472 which was found to be significant at 0.01 level of significance. This means that these types of schools contribute significantly to the development of problem-solving skills of the students. Thus, the null hypothesis, H_5, was rejected at the specified level leading to conclude that private and government schools differ in promoting skill of problem solving among secondary school students. Means of the two groups indicate that students of private schools were higher in skill of problem solving compared with government schools.

Interaction Effect

Subject Streams × School Management

Table 3 shows that the *F*-ratio for the difference in the means of problem-solving skill due to the interaction effect of subject streams and school management was 0.019 which was not found to be significant at 0.05 level of significance and thus the null hypothesis, H_6, was

Table 3: Summary of 2×2 ANOVA on scores of skill of problem solving

Source of Variation	Sum of squares	df	Mean sum of square	*F* Ratio
Subject streams	150.976	2	75.487	1.651
School management	616.107	1	616.107	13.472**
Subject stream × school management	1.773	2	0.887	0.019
Error variance	6,583.68	144	45.72	
Total	7,352.536	149		

*significant at .05 level; **significant at .01 level of confidence

accepted. This means that there is no interaction between subject streams and school management to result into difference in scores of problem-solving skill of secondary students of government or private schools studying in arts, commerce and science stream.

2 × 2 ANOVA ON SCORES OF COMMUNICATION SKILLS

The sum of squares, degree and *F*-ratio for the main effects of subject streams and school management along with their interaction effect on scores of skill of communication are given below. The summary of 2 × 2 ANOVA has been presented in Table 4.

Table 4: Summary table of 2×2 ANOVA on scores of communication skills

Source of Variation	Sum of squares	df	Mean sum of square	*F* Ratio
Subject streams	127.000	2	63.500	1.832
School management	91.260	1	91.260	2.633
Sub. stream × school management	260.280	2	130.140	3.754*
Error variance	4,991.266	144	34.662	
Total	5,469.806	149		

*significant at .05 level; **significant at .01 level of confidence

Main Effects – Subject Streams

Table 4 shows that the *F*-ratio for the difference in the means of communication skill by arts, commerce and science students was found to be 1.832 which was not found to be significant at 0.05 level of confidence. This means that difference in subject streams does not contribute significantly to the development of communication skill of the students. Thus, the null hypothesis, H_7, was not rejected. It may be inferred that students from arts, commerce and science streams do not differ on their communication skills.

Main Effect – School Management

Table 4 shows that the *F*-ratio for the difference in the means of communication skill by government and private school students was not found to be significant at 0.05 level of confidence. This means that communication skills of the students in government and private schools are not different. Thus, the null hypothesis, H_8, was not rejected at the specified level. It may be concluded that this type of school management does not seem to contribute significant differences in the development of communication skills among secondary school students.

Interaction Effect

Subject Streams × School Management

Table 4 shows that the *F*-ratio for the difference in the means of communication skill due to the interaction effect of subject streams and school management was 3.754 which was found

to be significant at 0.05 level of significance. This means that there is interaction between subject streams and school management to affect communication skill of secondary school students. Thus, the null hypothesis, H_9, was rejected at the specified level. To probe further, t-ratios for the different combination groups due to this interaction were computed, and it was found that among all combination groups due to school management (private and government) and subject streams (arts, science and commerce), t-ratios for the difference in scores of skill of communication were not found to be significant except for the combination group of Commerce group of private schools. This means that students of only commerce stream studying in private schools had higher communication skills as compared with students of all other combination groups.

2 × 2 ANOVA ON SCORES OF SKILL OF CRITICAL THINKING

The sum of squares, degree and F-ratio for the main effects of subject streams and school management along with their interaction effect on scores of skill of critical thinking are given in Table 5.

Table 5: Summary table of 2 × 2 ANOVA on scores of skill of critical thinking

Source of Variation	Sum of squares	df	Mean sum of square	*F* Ratio
Subject streams	336.053	2	168.027	4.933**
School management	92.827	1	92.827	2.725
Subject stream–school management	91.893	2	45.947	1.349
Error variance	4,904.928	144	34.062	
Total	5,425.701	149		

* Significant at .05 level; **significant at .01

Main Effects – Subject Streams

Table 5 shows that the F-ratio for the difference in the means of skill of critical thinking of arts, commerce and science students was 4.933 which was found to be significant at 0.01 level of confidence. This means that three groups of secondary students, coming from three subject streams were significantly different in their skill of critical thinking. Thus, the null hypothesis, H_{11}, was rejected at the specified level. It indicated that there is a significant difference between the critical thinking skills of students studying in different subject streams. To examine which of these three groups had higher skill of critical thinking, t-ratios for different groups were computed and it was found that

● Science students possessed higher order critical thinking than those in arts streams.

● Commerce students possessed higher order critical thinking than those in arts streams.

● Science and commerce students were equal in skill of critical thinking.

Main Effect– School Management

Table 5 shows that the *F*-ratio for the difference in the means of skill of critical thinking of government and private school students was 2.725 which was not found to be significant even at 0.05 level of confidence. This means that these types of schools do not contribute significantly in the development of critical thinking of the students. Thus, the null hypothesis, H_{10}, was not rejected. It may be concluded that secondary students of private and government schools did not differ in their scores on skill of critical thinking.

Interaction Effect

Subject Streams × School Management

Table 5 shows that the *F*-ratio for the difference in the *means of skill* of critical thinking due to the interaction effect of subject streams and school management was 1.349 which was not found to be significant at 0.05 level of confidence. This means that there is no interaction between subject streams and school management to affect scores on skill of critical thinking of secondary students, and thus the null hypothesis, H_{12}, was not rejected at the specified level. It leads to conclude that subject streams and school management do not interact to bring differences in scores of skill of critical thinking of secondary students.

CONCLUSIONS

For Skill of Decision-Making

- Secondary students of arts, commerce and science stream were equal in their skill of decision-making.

- Government school students were higher on skill of decision-making as compared with their counterparts of private schools.

- There is no significant difference between the decision-making skill of XI graders due to the interaction between school management and subject streams.

For Skill of Problem Solving

- There is no significant difference between the problem-solving skill of XI graders studying in arts, commerce and science stream.

- Students of private schools were higher in skill of problem solving as compared with those of government schools.

- There is no interaction between subject streams and school management to result into difference in scores of problem solving skill of secondary students of government or private schools studying in arts, commerce and science stream.

For Communication Skills

- Secondary students from arts, commerce and science streams do not differ on their communication skills.

- There is no significant difference in the communication skills of secondary students studying in government and private schools.

- There is significant difference between the communication skill of XI graders due to the interaction between school management and subject streams. Students of only commerce stream studying in private schools had higher communication skills as compared with students of all other combination groups.

For Skill of Critical Thinking

- There is a significant difference between the critical thinking skill of students studying in different subject streams.

    o Science students possessed higher order critical thinking than those in arts streams.

    o Commerce students possessed higher order critical thinking than those in arts streams.

    o Science and commerce students were equal in skill of critical thinking.

- There is no significant difference in the skill of critical thinking of secondary students studying in government and private schools.

- There is no significant difference in the skill of critical thinking of secondary students due to the interaction between school management and subject streams.

DISCUSSION OF RESULTS

The results of present study indicate the following educational implications of the findings:

As there is a significant difference between the decision-making skill of students of government and private schools, it shows that the system of imparting knowledge and students tasks varies in government and private schools. According to the present study, the decision-making skill of government school students is more than those who are in private schools, so the private schools should pay attention on this area. They can improve the decision-making skill of the students by assigning them some responsibilities.

As there is significant difference between the problem-solving skill of students of government and private schools. It means that the curricular activities, instructional processes and co-curricular activities in these schools are not the same. The results of present study reveal that the students of private schools were higher on skill of problem solving than those who are in government schools. It reflects upon the instructional process of private schools where students

do not seem to be spoon-fed and are provided with opportunities where they are encouraged to take challenges and solve problems.

The results of the present investigation also reflect upon differences in communication skill of students due to the interaction effect of school management and subject streams. It means that the combination of the type of school and a subject stream also affects the communication skill of the students. It was found that the students of commerce stream studied in private schools have better communication skill than the other students. So, emphasis should be made that all the students can develop their communication skill as it is very important to survive harmoniously. It can be done by organising declamations, debates and so on.

According to the present study, there is a significant difference in the critical thinking skill of students studying in different subject streams. It shows that there must be some differences in the content matter and teaching methods in various streams. It was found that the science and commerce students possess higher order critical thinking than those in arts stream. The contents in science and commerce provide many opportunities to react critically in the class. Maybe these critical interactions with the teacher and in groups of students sharpen the skill in general, and students learn to use their thinking power to get the solution of their problems.

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A Study of Achievement Motivation and Family Environment of Senior Secondary Students of Working and Non-Working Mothers

Hemant Bhatt

ABSTRACT

Achievement motivation forms to be the basic for a good life. People who are oriented towards achievement, in general, enjoy life and feel in control. Being motivated keeps people dynamic and gives them self-respect. They set moderately difficult but easily achievable targets, which help them achieve their objectives. The purpose of this study is to compare the achievement motivation and family environment of senior secondary student of working and non-working mothers. The sample of the study comprised of 196 students selected randomly from the govt. senior secondary schools of Punjab. Family environment scale and achievement motivation questionnaire were used to collect the data. A significant difference is found in the family environment of working and non-working mothers. The study also revealed the significant difference in the achievement motivation of working and non-working mothers.

Keywords: Achievement motivation, Working mother, Non-working mother, Family environment, Adolescents, Government schools, Senior Secondary, Questionnaire

INTRODUCTION

The role of mother in the development of child is very vital in a family. Mother is more influential than father to discipline the child in behaviour, study habits, attitude and guides towards a career. In the modern society, most of the family is a nuclear one, and like Western countries both the parents are working. Women employment rate has increased very rapidly in India resulting changes in the structure and function of family. Children whose mothers are working grow in a different environment as compared with those of non-working mothers. Differences in the family environment have great impact on behaviour of child education which has become the right of every child. Learning style differs from person to person. Some of us receive information better, whereas others prefer an environment that has the least visual distraction. It is important that the students should become independent learners, which help them to apply learnt skills as well as to prepare themselves for the examinations. Over the past quarter century, mothers in India increasingly converted their home production into labour

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market production. Indian society is extremely complex, and economic structure is significantly different from that in the western industrial society. Accordingly, female labour force participation rate of 33 per cent implies that only 125 million of the roughly 380 million working-age Indian females are seeking work or are currently employed (Census of India, 2011). Family pattern in our society is undergoing a rapid change. The basic unit of our family structure is also changing. The old institution of joint family system has lost its lustre and is being rapidly replaced by that of the nuclear family. This invariable has direct effect on intra-family relationships and psychological behaviour of the adolescents. But somehow, in the city life, maternal employment could have either a positive or negative effect on children. On the one hand, maternal employment could increase family income and provide a positive role model and increase maturity and independence among the children. On the other hand, the opportunity cost of additional hours worked is the amount of supervision and influence parents could have exercised over their children's activities.

In today's world of competition, the job of the mother is essential to keep pace with the present educational system and the world of work. Due to advancement in education, adolescents need to be regularly fed with the latest information for which they need help of their parents. Not only for their studies but also for their career choices, they require parental guidance. They want full involvement and interest of their parents in them to help choose the right type of career and the related-training programmes.

Parental absence from home due to employment of both the parents is becoming more and more prevalent in our society, especially in big towns and cities. Maternal employment had both positive and negative impact on the life of adolescent children. Moreover, during adolescent, the individual is also influenced to great extent by the relationships that inhere amongst the family members; there would be some difference in the families where mothers are working and where they are only housewives. The academic achievement of the adolescent is also influenced by the maternal employment.

On the other hand, high competitiveness and demanding nature of jobs not only make the parents frustrated, but also pass on their job hazards to their adolescent children. The stresses and strains of parents sometimes create tensions and affect their family relationships. It can be said that maternal employment can have both kinds of effects. Positive and negative effects on the adolescent children's psychological needs and concerns depend on the family environment and academic achievement of children.

FAMILY ENVIRONMENT

Aggarwal (1997) stated that among various groups, the family occupies the first and the most significant place in the development of the child. Healthy parental relations in the family are a medium for providing wholesome and adjusted personalities responsible for the success.

Jha (2000) stated that family is the primary institutions where children get an opportunity to learn, to interact and socialise with other members, and it is also evident that family environment, type of family, family size, number of children in the family do affect the children behaviour.

ACHIEVEMENT MOTIVATION

Achievement motivation is based on reaching success and achieving all our aspirations in life. Achievement goals can affect the way a person performs a task and represent a desire to show competence (Harackiewicz *et al.*, 1997). Colemann (2001) is of the view that achievement motivation is a social form of motivation involving a competitive drive to meet the standard of excellence. Busato *et al.* (2000) defined achievement motivation as 'the striving tendency towards success with the associated positive effects and towards the avoidance of failure and the associated negative effects'. Rosa and Preethi (2012) revealed that emotional maturity of children of non-working mothers is less than that of children of working mothers. The study revealed that negligible relationship exists between academic stress and emotional maturity of higher secondary school students. Children of working mothers are emotionally matured than children of non-working mothers. Children of non-working mothers are low stressed than children of working mothers. Attri (2013) revealed that there were insignificant differences between the rural senior secondary students of working mothers and non-working mothers on the measure of overall, comprehension, concentration, task, orientation, study, interaction, drilling, support, recording and language components of study habits. The result of the study reveals that there is no significant difference between the rural and urban school students in their achievement motivation (Velmurugan and Balakrishnan, 2013). Moreover, it is inferred that there is no significant difference between the general stream higher secondary students coming from joint family and nuclear family in their achievement motivation (Soni, 2013). A significant positive relationship was found between five factors of the home environmental, that is mother's occupation, father's occupation, mother's education, father's education, family size and academic achievement motivation. Parental encouragement was the only factor that was not significantly related to academic achievement motivation (Mathew, 2014). Women are more likely than men to experience ongoing stress, partly because of family and social responsibilities, whereas men report more financial pressure. A corporate woman can be stressed with her work. A busy mother is stressed sometimes with her kids and all the work that she has to do at home.

Some of these have been taken up for investigation in the present study. These are family environment and achievement motivation. It is apparent that maternal employment has profound implication for our changing social pattern. It is, therefore, very much relevant to study the effect of maternal employment on various dimensions of senior secondary student's life. There is a need of probing into the problem.

Objectives

The objectives of the present study are as follows:

➢ To study and find out the difference in family environment of senior secondary students of working and non-working mothers.

➢ To study and compare achievement motivation of senior secondary students of working and non-working mothers.

Hypothesis

H1 There is no significant difference between the family environment of senior secondary students of working and non-working mothers.

H2 There is no significant difference between the achievement motivation of senior secondary students of working and non-working mothers.

DELIMITATION OF STUDY

The present study has been delimited in respect of the following:

1. The size of the sample was confined to 196 senior secondary students.

2. The sample was raised only from Government schools of Punjab.

3. The sample was restricted to only to the +2 stage.

METHOD OF STUDY

The method of study of investigation used in the present study was essentially descriptive survey method. Descriptive research describes and interprets existing conditions.

SAMPLE OF THE STUDY

The technique adopted for sampling of the present study was essentially stratified, which is probability sampling in nature. This method is used when units of the universe are heterogeneous rather than homogenous. Under this method, first of all, units of the population are divided into different strata in accordance with their characteristics. Thereafter, by using random sampling, sample items are selected from each stratum.

The present study was conducted on a sample of 196 senior secondary selected from the Govt. senior secondary schools of Punjab within the age group of 17–19 years. The names of the schools selected for the present study are given in Table 1. Stratified random sampling technique was used for the selection of the sample.

The sample was restricted to the students of +2 stage of the senior secondary schools of Punjab. The total sample consisted of 196 students, and it included both the senior secondary

Table 1: School-wise breakup of the sample

Name of the School	Student elected from different strata			
	Arts	Science	Commerce	Total
Government Senior Secondary School, Kalanaur	33	33	32	98
Government Senior Secondary School, Dharowali	31	35	32	98

students which consisted of 98 students and senior secondary students of non-working mothers consisting of another 98 students.

TOOLS EMPLOYED

❖ Family environment scale, by Moos and Moos (1986)

❖ Deo Mohan's Achievement Motivation Scale (1985)

STATISTICAL TECHNIQUES USED

(i) Descriptive statistics techniques such as mean, standard deviation, skew ness and kurtosis were used to determine the nature of distribution of the scores.

(ii) Graphical techniques were used for descriptive analysis and visual perception of the data.

DISCUSSION OF THE RESULTS

It is apparent from Table 2 and Figure 1 that mean score of senior secondary school students of working and non-working mothers is significant at 0.01 level of significance on dimension cohesion, independence, intellectual recreational, active recreational and moral religious, whereas it is not significant on dimension expressiveness conflict, achievement orientation, organisation and control. Therefore, there exists no significant difference in the mean scores on family environment of senior secondary school students of working and non-working mothers. Hence, the null hypothesis H1. There is no significant difference between the family environment of senior secondary students of working and non-working mothers. The result indicates that there is significant difference in the family environment of working and non-working mothers. There is significant difference in the family environment of adolescent children of working and non-working mothers. The above results of present study are corroborated by a number of earlier studies which show that there is significant difference between the family environment of adolescent children of working mother and non-working mothers. The result of present study is supported by the findings of Mathew and Rosenthal (1993), Rogers (1996), Singh (1997) and Sarita (2003). The findings of the present study are partly agreed with the earlier findings of Sharma (1986), Harwod and Feruson (2000), Akhani *et al*. (1999) and Attri (2013) who reported that some of the areas of the study habits are affected by maternal employment and some areas are not.

Table 2: *t*-Ratio for difference in mean scores of working and non-working mothers on family environment

Dimensions	Groups	N	Mean	Std. Deviation	t-ratio	Level of Significance
Cohesion	Working	99	7.08	1.12	3.237	Significant
	Non-working	99	6.57	1.12		
Expressiveness	Working	99	6.45	1.46	0.870	Not significant
	Non-working	99	6.27	1.48		
Conflict	Working	99	6.54	1.35	0.851	Not significant
	Non-working	99	6.37	1.32		
Independence	Working	99	6.26	1.64	3.204	Significant
	Non-working	99	6.94	1.32		
Achievement orientation	Working	99	6.79	1.56	1.066	Not significant
	Non-working	99	7.01	1.37		
Intellectual recreational	Working	99	6.43	1.21	4.284	Significant
	Non-working	99	7.11	1.01		
Active recreational	Working	99	5.90	1.32	8.317	Significant
	Non-working	99	7.29	0.99		
Moral religious	Working	99	4.92	2.11	2.609	Significant
	Non-working	99	5.57	1.27		
Organisation	Working	99	6.84	1.46	1.212	Not significant
	Non-working	99	6.58	1.58		
Control	Working	99	6.48	1.42	1.737	Not significant
	Non-working	99	6.15	1.27		

ANALYSIS OF MEAN SCORES ON ACHIEVEMENT MOTIVATION

It may be observed from Table 3 that the *t*-ratio for difference in mean scores on achievement motivation of senior secondary school students of working and non-working mothers is 9.68, which in comparison to the table value was found to be significant at 0.05 and 0.01 levels of significance. The data provided sufficient evidence to reject the null hypothesis that there is no

Table 3: *t*-Ratio for difference in mean scores of working and non-working mothers on achievement motivation

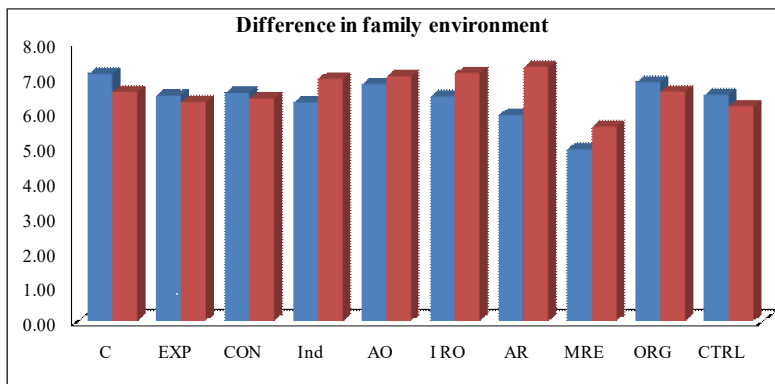| Dimension		N	Mean	Std. Deviation	t-Ratio
Achievement motivation	Working	99	156.19	21.19	9.68
	Non-working	99	130.16	16.30	

Figure 1: Graphical presentation of difference in mean scores on family environment of working and non-working mothers

significant difference of the mean scores on achievement motivation with respect to senior secondary school students of working and non-working mothers. The result indicates that the two groups are not matched on achievement motivation. The results were in tune with the findings of Prakash and Patnaik (2005) who concluded that cooperative learning had a positive effect on achievement motivation. Moreover, Amirault (2003) supported the findings as he revealed that significant difference in motivation levels were observed for two treatment groups. However, the finding is in contrary to those of Kebritchi *et al.* (2010) who concluded that no significant improvement was found in motivation of experimental and control groups.

EDUCATIONAL IMPLICATIONS OF THE STUDY

On the basis of the findings of the present research, the researcher feels that she is in a position to say some things by way of suggestions to the teachers, parents and counsellors so that they may help the senior secondary school students of working and non-working mothers in facilitating their development.

1. Parents, teachers and the community, in general, need to be empathic towards the major needs and concerns of senior secondary school students of working and non-working mothers. This enables them to have good relations with senior secondary school students.

2. Upper class mothers or professionals remain busy for nearly 9–11 h in their jobs. They can be in touch with their children with the help of internet, Facebook, WhatsApp, mobile phones and others during their job hours. This will help a lot to look over their children's activities, and adolescents also would not feel neglected.

3. Middle class/lower class women should choose part time so that they could spend enough of time with their children. Jobs like that of a teacher require 6 h a day, and at that time, adolescent children are also busy in their schools and colleges and others.

4. Employment of mothers leaves a good impact on their adolescent children in a city; women should prefer jobs for better life of their children.

5. Due attention should be paid to the period of adolescence as the students at this stage are more prone to encounter various psychological problems which are likely to affect their physical, mental, emotional, health, home and social adjustment.

6. Educational and vocational counselling is essential for helping young students with their problems and for their general well-being.

7. Family environment plays an important role in the adolescent's life. Family set up should allow their adolescents' maximum autonomy and independence so that he/she can assume adult status at the appropriate time.

8. Parents should arrange counsellors for their personal problems. In educational curriculum, there should be provision of the students' counselling in the field of educational, vocational and personal problems.

9. In dual earner families, parents need to talk to their children to understand their psychological needs and also to help them in their studies and choosing their career and others. This will help a lot to understand them and to sort out their problems.

SUGGESTIONS FOR FURTHER RESEARCH

1. Relationships have had to be examined with attention to other variables that moderated effects; particularly important were social class, the mother's marital status, whether the employment was full- or part-time, the parents' attitudes and the child's gender.

2. A comparative study of adolescent children of working and non-working mothers on variables other than those used in the present study can be carried out.

3. The sample can be taken from other states like Punjab, Haryana and others and extended not only to the city but to the country level also.

4. An investigation can also be carried out to compare the psychosocial problems of students belonging to urban and rural areas.

5. The study can also be varied out to see the effect of maternal employment on vocational maturity and vocational decisions of their adolescent children.

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A Study on Stress Management among Arts and Science College Teacher in Trichy City

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ABSTRACT

The aim of the study is to find out the stress management level of arts and science college teachers in Trichy City. The teachers are the assets of any country. They are burdened with the greatest responsibility of 'nation building'. The teaching profession has an esteemed place among all professions. However, teaching as a profession at any level is becoming more demanding day by day. Teaching has also become more like a managerial job and is having multi-dimensional job responsibilities. All these situations greatly enhance the stress among teachers. Stress can't be avoided, but one can learn how to manage it. Policy makers are advised to analyse the college teacher training and assessment system with the assumption that personal and social characteristics and working conditions may have an effect on college teacher stress. Stress management scale was developed by Dr. Vandana Kaushik and Dr. Namrata Arora Charpe. Sample teachers were selected for simple random sampling by using lottery method because of easy accessibility and affordability analysed by using statistical package of simple percentage.

Keywords: Stress, Stress management, Workplace stress, College teachers, Arts and science college

INTRODUCTION

Meaning of Stress

The word 'stress' has been derived from the Latin word 'stringere' which means to draw tight. The term is used to refer to hardship, strain, adversity or affliction. Various terms have been synonymously used with stress such as anxiety, frustration, conflict, pressure and so on. Every human being has his/her own understanding of stress, because all demand of adaptability does evoke the stress phenomenon.

Stress is simply the body's non-specific response to any demand made on it. Stress is not by definition synonymous with nervous tension or anxiety. 'Stress' provides the means to express talents and pursue happiness. It can also cause exhaustion and illness, either physical or psychological, heart attack or accidents. The important thing to remember about stress is that certain forms are normal and essential. The result of continuing stress may because disruption is one or more of the following areas of health, physical, emotional, spiritual and social.

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An occupational stress is any force that pushes a psychological or physical factor behind its range of stability, producing a strain within the individuals. Stress in teaching is an ongoing issue of concern for those involved in education. Teacher stress is defined as experiences in teachers, of unpleasant, negative emotions such as anger, frustration, anxiety, depression and nervousness, resulting from some aspect of their work as teachers (Kyriacou, 2001).

Working in organisations not only provides individuals with life-sustaining income but also exerts its own pressure on them. This can ultimately have negative consequences both for achieving the goals of the organisation and meeting the needs of the individuals working in them. Thus, the work environment is a source of social and psychological stress, which has harmful effects on the well-being of the employees. Stress in general and occupational stress in particular is universal and frequently disabling human phenomenon. Stress arising at work has detrimental effect on the behaviour of people, which ultimately results in personal and organisational inefficiency. Occupational stress can be described as a condition where occupation-related factors interact with the worker to change (disrupt/enhance) his or her psychological or physiological condition, so that the person's mind and/or body is forced to deviate from its normal way of functioning.

STRESS MANAGEMENT

Stress management is the need of the hour. Stress management refers to the wide spectrum of techniques and psychotherapies aimed at controlling a person's levels of stress, especially chronic stress, usually for the purpose of improving everyday functioning. Sometimes stress is normal and even it is useful. Stress also helps if somebody needs to work hard or react quickly. There is a great need to figure out what causes stress for an employee. Everyone feels and responds to stress in different ways. Tracking stress can help to find out what is causing stress and how much stress one can feel. Then one can take steps to reduce the stress or handle it in a better way.

REVIEW OF LITERATURE

Davis and Newstrom (1985) stress is a condition of strain on one's emotion's thought processes and physical condition. When it is excessive, it can threaten one's ability to cope with the environment; 'stress' is the general term applied to the pressures people feel in life. As a result of these pressures, employees develop various symptoms of stress that can harm their job performance. People who are stressed may become nervous and develop chronic worry. They are easily provoked to anger and are unable to relax. They may be uncooperative or use alcohol or drugs excessively. These conditions occur from other causes also, but they are common symptoms of stress.

Mathew (1993) stress has a variety of meaning to people in the workplace. To the production manager in a chemical plant, it may be the tension of missing the shipping date of a large order

for a major customer. To the business executive, it may be frustration associated with the inability to acquire sufficient short-term loans from banks to cover the operating needs and so on.

In the words of Szilagyi and Wallace, stress is an internal experience that creates a psychological or physiological imbalance within an individual and results from factors in the external environment, the organisation or the individual.

D'Souza (1993) today's leaders not only live and work at a faster pace but must also deal with uncertainty and change. They need effective methods for coping with the kind of stress that affects anyone in leadership positions. People popularly identify managing directors or chief executive officers as those who are most susceptible to stress and disease. However, people at all levels of management find themselves exposed to comparable pressures.

Robbins (2005) most of us are aware that employee stress is an increasing problem in organisations. Friends tell us they're stressed out from greater workloads and having to work longer hours because of downsizing at their company. Parents talk about the lack of job stability in today's world and reminisce about a time when a job with a large company implied lifetime security. We read surveys in which employees complain about the stress created in trying to balance work and family responsibilities. In this section, we'll look at the causes and consequences of stress and then consider what individuals and organisations can do to reduce it.

Xiao and Li (2003) in their study on 'Teachers Needs in China' reveal that during the past 10 years or more, a majority of researchers' job satisfaction in China have mainly focused on urban areas rather than on rural areas with more and more emphasis on education in rural areas; especially in areas of high poverty, recent studies have paid more attention to teachers' job satisfaction in rural areas.

Sargent and Hannum (2005) in their 'Keeping Teachers Happy: Job Satisfaction among Primary School Teachers in Rural Northwest China' comparative study highlight an in-depth research on teacher's job satisfaction in rural north-west China in terms of community factors, school environment factors and teacher characteristics. Their findings were mostly in alignment with previous studies, but contrary to their assumptions; however, teachers with greater workloads felt more satisfied. Further, more economic development was negatively connected with teacher's satisfaction.

Jha (1988) in his study on 'Jobs Stress and Employee Strain in India Executives' explains the pattern of stress and strain in three work groups, namely production, personnel and data-processing divisions in an organisation. Results indicated that job future ambiguity had negative effects on job satisfaction in all the three groups. The pattern of stress in the three groups was different among different levels of management. Among different levels of managers, the diddle level managers had more role ambiguity than others did.

Reddy and Ramamurthi (1991) in their study on 'The Relation between Stress Experience on the Job-Age, Personality and General ability' analysed the influence of age, personality and general ability of the individual in the perception of stress. It was found that only age influenced the perception of stress. There was only very limited contribution of personality and general ability of the individual to the intensity of stress experience of the individual.

Rajeswari (1992) in her study on 'Employee Stress: A Study with Reference to Bank Employees' found significant negative relationship between age and stress and also between experience and stress. This study also found negative correlation between number of members in the family and stress. The level of stress did not differ between different levels of workers, namely officers and clerks.

Singh and Sehgal (1995) in their study on 'Men and Women in Transition: Patterns of Stress, Strain and Social Relations' highlight the patterns of stress and strain among men and women as well as single- and dual-career couples. They found that male and female managers did not differ significantly on various stress dimensions. Difference in gender was however found in strains. Women were characterised by anxiety, whereas men exhibited more symptoms of somatic problems comparing the single and dual couples. It was found that male managers with working spouses experienced higher workload than managers whose spouses were not working. In strains also, single-career male managers had less irritability than dual-career male managers, and overall single-career male managers had better psychological well-being than others. Working women managers had better physical well-being than their working husband did but had poorer psychological well-being.

Lewis (1999) in his study on 'Teachers Coping with the Stress of Classroom Discipline' examined that the teachers' estimations of stress arise from being unable to discipline pupils in the way. They would prepare overall maintaining discipline emerged as a stressor with those worst affected teachers who placed particular emphasis on pupil empowerment.

Berhem *et al.* (2004) in their study on 'A New Model for Work Stress Patterns' describe that the role of ambiguity is the main source of work stress and self-knowledge as the main coping strategy to overcome work stress. Work stress is believed to be one of the most important factors affecting productivity.

Kang (2005) in his study on 'Stressors among Medical Representatives: An Empirical Investigation' tries to investigate the various stressors related with the job of a medical representative. A sample of 140 medical representatives was taken for the purpose of the present study. The results showed interference of job in personal life, unsupportive colleagues, work load and continuous pressure for improved performance have been found to be causing stress among the medical representatives.

Devi (2006–2007) in her study on 'Occupational Stress: A Comparative Study of Worker in Different Occupations' describes identifying the degree of life stress and role stress experienced

by professional women. It also studies the effect of life stress and role stress on various demographic variables like age, experience and income. For the purpose of study, 180 women professionals (six different occupations) were chosen. It was found that science and technology professionals and doctors experienced significantly greater life stress and role stress.

Huang and Waxman (2009) found that a supportive school environment is crucial to the enhancement of student teaching experiences. This study assesses student–teachers' perceptions of secondary school environments and then relates the perceptions to their satisfaction with school experiences and teaching commitment. The results show that considerable disparities between student–teachers' perceptions of actual and preferred school environments and suggest certain directions for improvement. Student–teachers' perceptions about their school environments, especially in the areas of professional interest and staff freedom, were positively associated with their satisfaction. Several school environmental aspects influenced the total years they planned to teach and their intention to teach at the placement schools.

OBJECTIVES OF STUDY

1. To describe the socio-demographic characteristics of the respondent.
2. To identify measures of stress management level of the college teachers.

HYPOTHESES

1. There is a significant relationship between type of family of the respondents and stress management.
2. There is a significant relationship between domicile of the respondents and stress management.
3. There is a significant relationship between the age of the respondents and stress management.
4. There is a significant relationship between years of work experience of the respondents and stress management.
5. There is a significant relationship between monthly income of the respondents and stress management.
6. There is a significant relationship between gender of the respondents and stress management.
7. There is a significant relationship between marital status of the respondents and stress management.

RESEARCH METHODOLOGY

The present study is based on both primary and secondary data. Primary data have been collected by conducting a survey among 80 sample arts and science college teachers of Trichy City in the state of Tamil Nadu. Secondary data have been collected from books, journals,

newspapers, periodicals, reports and Internet. Administering stress management scale was constructed and standardised by Dr. Vandana Kaushik and Dr. Namrata Arora Charpe. The first part of the questionnaire was related to personal details of college teachers, second part relates with measuring of stress management among the college teachers with the help of Statistical Package of Simple Percentage. Stress management scale was developed on the lines of the Likert summated rating scale to recognise the common strategies used to overcome stress. The item responses are to be elicited on a Likert scale that range from 0 (strongly disagree) to 5 (strongly agree).

SAMPLING DESIGN

A sample of 80 college teachers was taken to meet the sample adequacy; for conducting factor analysis, a number of sample college teachers, for the study, were selected from the total population. For the purpose of the study (80 teachers), 10% of the samples were selected. Sample college teachers were selected for simple random sampling by using lottery method because of its easy accessibility and affordability.

ANALYSIS AND INTERPRETATION

The total number of respondents is 80 in which there are 36 male and 44 female respondents. The percentages of male and female respondents are 45% and 55%, respectively (Figure 1).

The age of the respondents are classified into four groups, in which 2 respondents (2.5%) are from the age group of up to 25, 40 respondents (50%) are from the age group of 25–35, 33 respondents (41.25%) are from the age group of 35–45 and 19 respondents (23.75%) are from the age group of 45 above (Figure 2).

The total number of respondents is 80 in which there are 16 single and 64 married respondents. The percentages of single and married respondents are 20% and 80%, respectively (Figure 3).
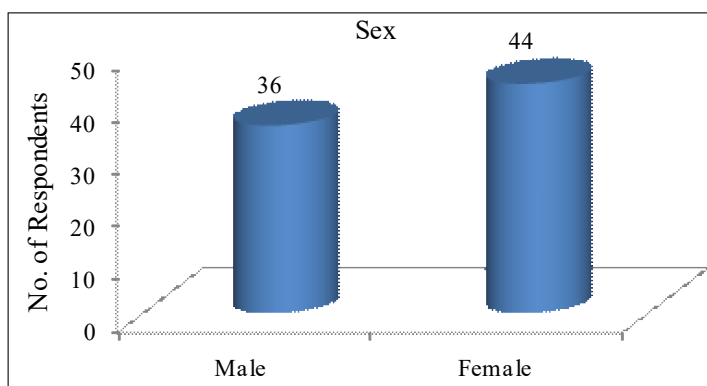

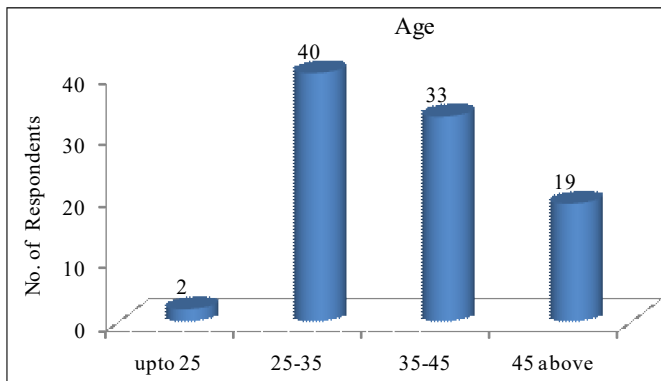**Figure 1: Gender of the respondents**
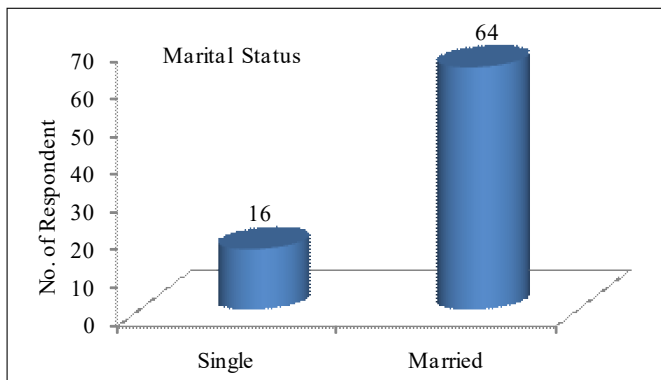
Figure 2: Age of the respondents

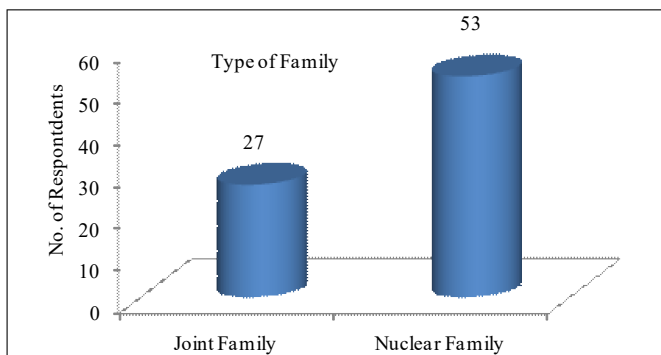**Figure 3: Marital status of the respondents**

Figure 4: Type of family of the respondents

The total number of respondents is 80 in which there are 27 joint family and 53 nuclear family respondents. The percentages of joint family and nuclear family respondents are 33.75% and 66.25%, respectively (Figure 4).

Figure 5 explains the domicile background of the respondents, like majority of the respondent, 60 (75%), from urban, 12 (15%) from rural and 8 (10%) semi-urban.

Figure 6 explains that the respondents below the monthly income of 15,000 are 32 (40%), between the income of 15,000 and 20,000 are 29 (36.25%), between the incomes of 20,000 and 25,000 are 17 (21.25%) and between the income of 25,000 and 30,000 are 2 (2.5%).

Figure 7 explains that the respondents below the experience of 5 years are 28 (35%), between the experience of 5 and 10 years are 23 (28.75%), between the experience of 10 and 15 years are 13 (16.25%) and above the experience of 15 years are 2 (2.5%).
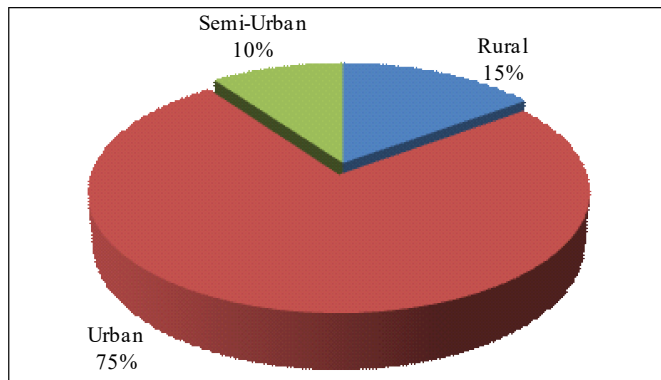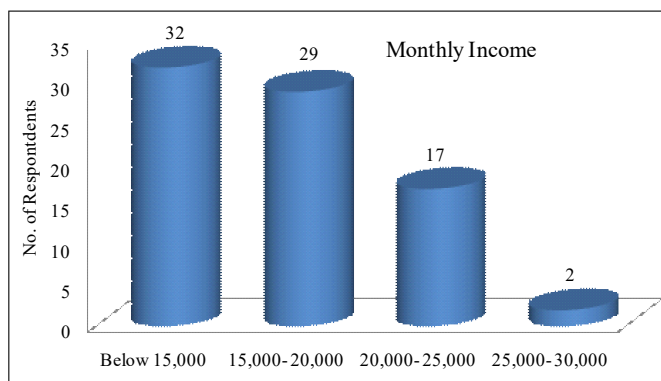

Figure 5: Domicile of the respondents
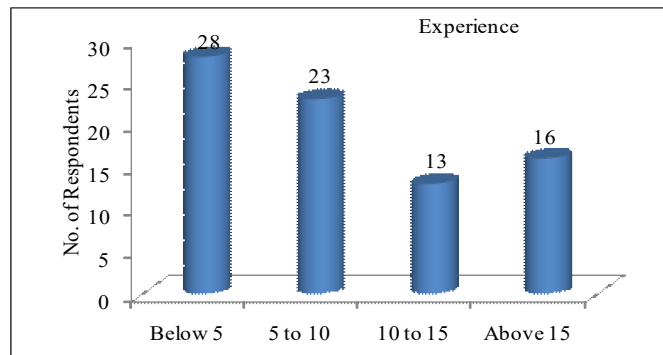

Figure 6: Monthly salary of the respondents

Figure 7: Experience of the respondents

Table 1: Level of stress management

Stress Management Level	Frequency	Per Cent	Valid Per Cent	Cumulative Per Cent
Excellent management	10	12.5	12.5	12.5
Very good management	9	11.3	11.3	23.8
Good management	9	11.3	11.3	35.0
Moderate management	18	22.5	22.5	57.5
Poor management	30	37.5	37.5	95.0
Very poor management	4	5.0	5.0	100.0
Total	80	100.0	100.0	

From Table 1, it is observed that less than 30 (37.5%) college teachers had a poor management level of stress, 18 (22.5%) had a moderate management level of stress, 10 (12.5%) had an excellent management level of stress, 9 (11.3%) had a very good management level of stress, and remaining 4 (5.0%) had a very poor management level of stress.

H1: There is a significant relationship between type of family of the respondents and stress management.

From Table 2, it is evident that there is no significant difference between type of family of the respondents and stress management. Hence, null hypothesis is accepted. Value $P > 0.05$ means

Table 2: Z test between types of family of the respondents and stress management

Stress Management Level	N	Mean	Std. Deviation	Statistical Inference
Joint family	27	111.3333	18.99393	$Z = -1.250; P > 0.05$
Nuclear family	53	117.0377	19.90454	Not significant

that there is no statistically significant difference between the respondents who live in nuclear type of family and those who live in joint family with regard to stress management. It explains that the type of the family has no influence on the stress management among the college teachers.

H2: There is a significant relationship between domicile of the respondents and stress management.

Table 3: *F* test: one way analysis of variance among the respondents with different domicile of stress management

Stress Management Level	Sum of Squares	Mean	Mean Square	Statistical Inference
Between groups	5,386.304	$G1 = 105.00$	2,693.152	$F = 8.236; P < 0.01$
Within groups	2,5177.683	$G2 = 114.12$	326.983	Significant
Total	30,563.988	$G3 = 137.75$		

$G1$ = rural, $G2$ = urban, $G3$ = semi-urban.

From Table 3 it inferred that there is a significant difference among the various areas of living of the respondents with regard to the level of stress management. Hence, null hypothesis is rejected. Further, the mean score reveals that the respondents belonging to the semi-urban area experience more stress than the other two groups.

H3: There is a significant relationship between the age of the respondents and stress management.

Table 4: Karl Pearson' co-efficient of correlation between age of the respondents and stress management

Stress Management Level	Correlation Value	Statistical Inference
Age	0.310	$P < 0.01$; Significant

From Table 4, it was found that there is a significant relationship between the age of the respondents and stress management. Hence, null hypothesis is rejected. It explains that age of the respondents has an influence on the stress management level among the college teachers. The correlation value shows that there is positive relationship between the age of the respondent and the stress management level among the college teachers.

H4: There is a significant relationship between years of work experience of the respondents and stress management.

Table 5: Karl Pearson's coefficient of correction between years of work experience of the respondents and stress management

Stress Management Level	Correlation Value	Statistical Inference
Experience	0.170	$P > 0.05$; Not significant

Table 5 shows that there is no significant relationship between years of work experience of the respondents with regard to overall level of stress management. Hence, null hypothesis is accepted. This proves the understanding that roles of the teachers working in arts and science colleges do not change much due to experience. Work pressures and challenges are similar and neither change because of experience. Although experienced hand would have an edge, being more equipped to manage such situations does not relate much in this study population.

H5: There is a significant relationship between monthly income of the respondents and stress management.

Table 6: Karl Pearson's coefficient of correction between monthly income of the respondents and stress management

Stress Management Level	Correlation Value	Statistical Inference
Monthly income	-0.019	$P > 0.05$; Not significant

Table 6 interprets that there is no significant relationship between monthly income of the respondent and level of stress management. Hence, null hypothesis is accepted. It explains that the monthly income of the respondents has no influence on the stress management level among the college teachers. The correlation value shows that there is negative relationship between the monthly income of the respondent and the stress management level among the college teachers.

H6: There is a significant relationship between gender of the respondents and stress management.

Table 7: Association between gender of the respondents and stress management

Stress Management Level	Gender		Statistical Inference
	Male ($n = 36$)	Female ($n = 44$)	
Low	20	20	$\chi^2 = 0.808$; d$t = 1$
High	16	24	$P > 0.05$; Not significant

Table 7 construes that there is no significant association between gender of the respondents and level of stress management. Hence, null hypothesis is accepted, though the problems faced or felt by the male and female teachers are different and the reason for its influence is understood to be minimal in this study population.

H7: There is a significant relationship between marital status of the respondents and stress management.

Table 8 indicates that there is no significant association between marital status of the respondents and level of stress management. Hence, null hypothesis is accepted. This gives an explanation that marital status of the respondents does not contribute to the stress management in this study population.

Table 8: Association between the respondents by marital status of stress management

Stress Management Level	Marital Status		Statistical Inference
	Single ($n = 16$)	Married ($n = 64$)	
Low	10	30	$\chi^2 = 1.250$; d$t = 1$
High	6	34	$P > 0.05$; Not significant

CONCLUSION

This study was conducted at arts and science college teachers in Trichy City. The main aim of the study is to find out various reasons for the stress management level of college teachers. This study analysed that the college teachers faced stress in their working area because of their work pressure and inter-personal conflicts. In the results of the study, it is clear that the arts and science teachers as a whole are found to be poor management level of stress. The next finding of this study revealed that there is a significant difference among the various areas of living of the college teachers with regard to the level of stress management. Further, from the result it is clear that there is a significant relationship between the age of the respondents and stress management. Further, from the result, it is clear that there is no significant relationship between years of work experience of the respondents with regard to overall level of stress management. Further, from the result, it is clear that there is no significant relationship between monthly income of the respondent and level of stress management. It explains that the monthly income of the respondents has no influence on the stress management level among the college teachers.

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