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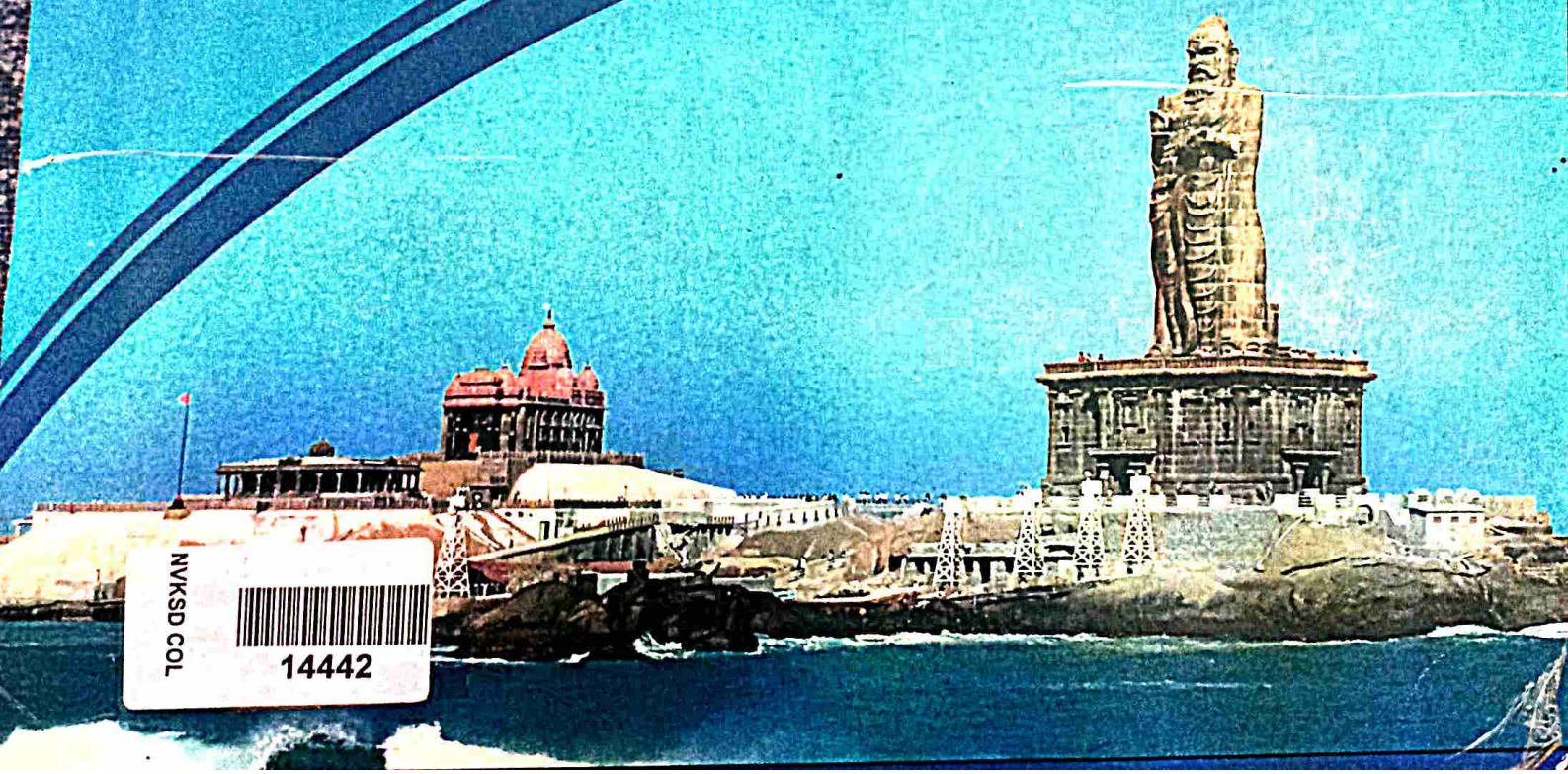

FRONTIERS IN EDUCATION AND RESEARCH

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N.V.K.S.D College of Education
Attoor, Kanyakumari District, Tamil Nadu.
nvksdcollege@rediffmail.com

Advisory Committee

From the Editor's Desk

The entire fabric of any progressive society is built upon the quality, dedication, competency and commitment of teachers. Young teachers contribute a great deal to the school education system, including energy, enthusiasm and competency. In this situation characterized by an ever exalting demand for empowered teachers, we stand today at the threshold of a crucial period in the history of teacher education. No professional field is as consistently a subject of criticism as teacher education. The present overall educational profile of India is still that of a pyramid. It will continue to be so for another decade or so. Some drastic measures, conceived on the basis of a well-planned strategy, will have to be taken.

Twenty-first century known as 'Knowledge Age' has witnessed phenomenal explosion of knowledge, application of information-cum-communication technologies, acceleration of access to knowledge and enhancement of the existing body of knowledge and skills. This momentum has influenced the system of teacher education by far the most. But the current overall profile of teacher training is theory- oriented relying heavily on the crutches of traditional lesson planning devoid of dynamic vision and strategy. Professional preparedness of the teachers still lacks that multidimensional wholesome attitude of imbibing knowledge of critical pedagogy.

In the coming decades of the 21st century, teacher education institutions have to play significant roles to make possible the dreams of the younger generation. The whole content, goals and objectives of teacher education will have to be radically changed to be in tune with the aspirations of

the new generation. The alarming gap between the requirements of the changing social and occupational world and the existing pattern of content-oriented training creates dissatisfaction among the students in particular, and the public in general. We need to make the system of education more innovative and futuristic in order to respond to the changing demands of society. Reforming the art of teaching would necessitate a critical observation and reflective analysis of the practice of teaching. Critical pedagogy provides an opportunity to reflect critically on issues in terms of their political, social, economic and moral aspects. It entails the acceptance of multiple views on social issues and a commitment to democratic forms of interaction. It facilitates collective decision-making through open discussion and by encouraging and recognizing multiple views.

Teaching is viewed as a mission. There has to be a will and a commitment to reform teacher education by setting goals and promoting innovations. We all have got an inescapable responsibility to dedicate ourselves to this cause.

We are extremely happy to release the first issue of this journal. The Editorial Board whole heartedly appreciate the contributors of this issue. The pages of the journal are always open to those who are interested to write on topics related to education and research. "Great achievements have small beginnings". Looking forward to prolific creations and creative suggestions in the ensuing years, we present the first issue of our journal before the enlightened citizens of our nation.

Editor

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CONTENTS

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N.V.K.S.D College of Education, Attoor.
nvksdcollege@rediffmail.com

COGNITIVE STYLE OF STANDARD XI STUDENTS IN RELATION TO THEIR ACHIEVEMENT IN CHEMISTRY

* R.Portia
** Dr.A.Joycilin Shermila
*** Dr.P.S Chandrakumar

ABSTRACT

This study aims at finding out the cognitive style of standard XI students studying Chemistry as one of the subjects. It also analyzes the cognitive style in terms of the levels of achievement in Chemistry. Survey method was used in the present study. The data were collected from the sample using the tool for Cognitive Style developed and validated by A. Joycilin Shermila (1999). A sample of 150 students of standard XI studying Chemistry in higher secondary schools in Trichy district were taken for the present study. Percentage analysis and chi-square analysis were used to test the hypothesis. The results have revealed that the standard XI students studying Chemistry are predominantly field independent. No significant association is found between the cognitive style and the level of achievement in Chemistry.

INTRODUCTION

Cognitive style differs from cognitive ability, the latter being measured by aptitude tests or so-called intelligence tests. Controversies exist over the exact meaning of the term 'cognitive style' and also as to whether it is a single or multiple dimension of human personality. However, it remains a key concept in the areas of education and management. If a student has a similar cognitive style as that of his/her teacher, the chances for positive learning experience will be more. Likewise, members of a group with similar cognitive styles will probably feel more positive about their participation in the team. This sort of positive outlook may make participants feel more comfortable when working with one another and this will guarantee grand success of tasks undertaken.

Cognitive styles are actually broad personal styles, which show typical ways in which one processes information. Some examples of cognitive styles that have been identified include: reflectiveness versus impulsiveness (the tendency to react to situations slowly, after examining several alternative responses, or rapidly with the first response that comes to mind); cognitive complexity versus simplicity (the tendency to view the world along many or few parameters; and tolerance for unrealistic experiences or the degree of comfort with experiences that are out of the ordinary) (Bertini, 1986).

Education should challenge the human brain. The present memory-based education system of the country stultified the growth of the brain, destroyed analytical abilities and creativity among students. The ability to think deeper will improve the understanding of the subject. It ultimately improves the achievement of the students. It involves perception, recall, reasoning, evaluating, imagining, organizing, application and problem solving. The goal of all these skills lead to better achievement.

* Ph.D.,Scholar,Dept.of Education, M.S.University,Tirunelveli,
** Associate Professor, Annamal College of Education, Tuticorin.
*** Principal (Retd.) Meston College of Education, Chennai.

Almost in all classrooms, only rote memory is encouraged. Hence the researcher feels that this style of learning will not help the individuals of different cognitive styles and as such will tell upon their achievement in different subjects. Based on this conceptualization, the investigators intended to probe into the cognitive style of the students studying in standard XI and their achievement in Chemistry, which may be a subject of interest for many.

This study will help to understand the association between the cognitive style and achievement in Chemistry of standard XI students with reference to gender, type of the school, locality of the student and medium of study of the students.

OBJECTIVES

1. To find the cognitive style of standard XI students studying Chemistry in Trichy district.
2. To find the level of achievement in Chemistry of standard XI students in Trichy district.
3. To find the cognitive style of low, average and high achieving standard XI students in Chemistry.
4. To find the significance of association between the cognitive style of standard XI students and their level of achievement in Chemistry.
5. To find the significance of association between the cognitive style of standard XI students and their level of achievement in Chemistry with regard to gender, type of school, local of student and medium of study.

METHOD

Survey method was used for the purpose of investigating the chosen problem.

SAMPLE

All the students of standard XI studying Chemistry in the higher secondary schools in Trichy district form the sample of the study.

From the population, the investigator selected 150 standard XI students from six higher secondary schools in Trichy district using simple random sampling technique as the sample of the study.

TOOL USED

For data collection, the investigator used the tool for Cognitive Style developed and validated by A. Joycilin Shermila (1999).

ANALYSIS OF DATA

Hypothesis – 1

The standard XI students in Trichy district are field dependent.

Table 1
Cognitive Style of Standard XI Students in Trichy District

Variable	Field Dependent		Field Independent	
	N	%	N	%
Cognitive Style	73	48.67	77	51.33*

*indicates the cognitive style.

Hypothesis – 2

The level of achievement in chemistry of standard XI students is high.

Table 2

Level of Achievement in Chemistry of Standard XI Students in Trichy District

Variable	Low		Average		High	
	N	%	N	%	N	%
Achievement in Chemistry	34	22.67	78	52.00*	38	25.33

*indicates the level of achievement.

Hypothesis – 3

The low, average and high achieving standard XI students in Chemistry are field dependent.

Table 3

Cognitive Style of Low, Average and High Achieving Standard XI Students in Chemistry

Achievement Level	Field Dependent		Field Independent	
	N	%	N	%
Low	15	44.12	19	55.88*
Average	34	43.59	44	56.41*
High	24	63.16*	14	36.84

*indicates the cognitive style.

Null Hypothesis – 4

There is no significant association between the cognitive style of standard XI students and their level of achievement in Chemistry.

Table 4

Association between the Cognitive Style of Standard XI Students and their Level of Achievement in Chemistry

Achievement Level / Cognitive Style	Low	Average	High	df	Calculated χ^2 Value	Table Value	Remark
Field Dependent	15(17)	34(38)	24(18)	2	4.28	5.99	NS
Field Independent	19(17)	44(40)	14(20)				

NS	=	Ho accepted at 5% level of significance.
S	=	Ho rejected at 5% level of significance.

Null Hypothesis – 5

There is no significant association between the cognitive style of standard XI students and their level of achievement in Chemistry with regard to gender.

Table 5

Association between the Cognitive Style of Standard XI Students and their level of Achievement in Chemistry with regard to Gender

Gender	Achievement Level / Cognitive Style	Low	Average	High	df	Calculated χ^2 Value	Table Value	Remark
Male	Field Dependent	9(9)	18(20)	11(9)	2	1.33	5.99	NS
	Field Independent	8(8)	22(20)	7(9)				
Female	Field Dependent	6(8)	16(18)	13(9)	2	3.90	5.99	NS
	Field Independent	11(9)	22(20)	7(11)				

NS = Ho accepted at 5% level of significance.
S = Ho rejected at 5% level of significance.

Null Hypothesis – 6

There is no significant association between the cognitive style of standard XI students and their level of achievement in Chemistry with regard to type of school.

Table 6

Association between the Cognitive Style of Standard XI Students and their Level of Achievement in Chemistry with regard to Type of School

Type of School	Achievement Level / Cognitive Style	Low	Average	High	df	Calculated χ^2 Value	Table Value	Remark
Private	Field Dependent	10(9)	19(23)	18(15)	2	3.25	5.99	NS
	Field Independent	9(10)	29(25)	12(15)				
Government	Field Dependent	5(7)	15(15)	6(4)	2	3.65	5.99	NS
	Field Independent	10(8)	15(15)	2(4)				

NS = Ho accepted at 5% level of significance
S = Ho rejected at 5% level of significance

Null Hypothesis – 7

There is no significant association between the cognitive style of standard XI students and their level of achievement in Chemistry with regard to locality of student.

Table 7

Association between the Cognitive Style of Standard XI Students and their level of Achievement in Chemistry with regard to locale of students

Locality of Student	Achievement Level / Cognitive Style	Low	Average	High	df	Calculated χ^2 Value	Table Value	Remark
Rural	Field Dependent	11(12)	23(26)	16(12)	2	3.16	5.99	NS
	Field Independent	14(13)	30(27)	9(13)				
Urban	Field Dependent	4(4)	11(12)	8(6)	2	1.14	5.99	NS
	Field Independent	5(5)	14(13)	5(7)				

NS	=	Ho accepted at 5% level of significance.
S	=	Ho rejected at 5% level of significance.

Null Hypothesis – 8

There is no significant association between the cognitive style of standard XI students and their level of achievement in Chemistry with regard to medium of study.

Table 8

Association between the Cognitive Style of Standard XI Students and their Level of Achievement in Chemistry with regard to Medium of Study

Medium of Study	Achievement Level / Cognitive Style	Low	Average	High	df	Calculated χ^2 Value	Table Value	Remark
Tamil	Field Dependent	13(15)	31(34)	23(18)	2	3.52	5.99	NS
	Field Independent	17(15)	35(33)	13(18)				
English	Field Dependent	2(1)	3(4)	1(1)	2	1.13	5.99	NS
	Field Independent	2(3)	9(8)	1(1)				

NS	=	Ho accepted at 5% level of significance.
S	=	Ho rejected at 5% level of significance.

FINDINGS

1. 51.33% of standard XI students in Trichy district are field independent.
2. 52.00% of standard XI students are average in their achievement in Chemistry.
3. 55.88% of low achieving students and 56.41% of average achieving students are field independent; whereas 63.16% of high achieving students are field dependent.

4. No significant association is found between the cognitive style of standard XI students and their level of achievement in Chemistry.

5. Similarly, no significant association is found between the cognitive style of standard XI students and their level of achievement in Chemistry with regard to gender, type of school, locality of student and medium of study.

EDUCATIONAL IMPLICATIONS

The present study indicates that the standard XI students studying Chemistry as one of the subjects are predominantly field independent. It shows that the students opting Chemistry are analytical by nature and because of such mental disposition, they may be inclined to show interest in the study of Chemistry. The hypothesis pertaining to their achievement in Chemistry has brought out the information on testing, that the achievement level is average. It may be attributed to the presence of fairly a good percentage of students (48.67%) having the cognitive style – field independent. Since, the study of Chemistry demands a highly analytical approach rather than a global outlook of the facts and figures, most of the students opting Chemistry do not seem to cope with the studies as it ought to be. It is also clearly brought out that the background characteristics such as gender, type of school, locale of student and medium of study are of no significance in influencing the achievement in Chemistry as well as their cognitive style. Hence, the investigators conclude that achievement in Chemistry of standard XI students in Trichy district is not mainly due to their cognitive style; whereas it may be influenced by several other mental and emotional characteristics.

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nvksdcollege@rediffmail.com

PROBLEM-BASED LEARNING (PBL) IN MATHEMATICS OF SECONDARY SCHOOL STUDENTS IN RELATION TO THEIR FORMAL THINKING ABILITY

* Dr.Bindu. R.L.
** Soumyalekshmi. K.S.

ABSTRACT

Indian education system nowadays has been subjected to many changes. Reforms in the methods of teaching have given more importance to small group learning rather than whole class learning. It is necessary to identify strategies in which each student becomes an active participant in the class. The young inquisitive minds may have questions about all sorts of things or natural phenomena they see in everyday life. An alternative is to change the focus of classroom from teacher-dominated to student-centered using a constructivist approach. The focus is now on to empower the child not only with the desired knowledge and understanding but also with necessary knowledge construction skills. Problem solving is one of the complex skills to be achieved through planned instruction and is very easy if it is through a systematic path of Problem-Based Learning (PBL). The skill of problem solving will be taught in real class room situation using in live problems confronted by us in our daily life. This paper thus presents the study of the Problem-Based Learning (PBL) in Mathematics of secondary school students in relation to their formal thinking ability.

NEED AND SIGNIFICANCE OF THE STUDY

To be successful in the workplace of the 21st century, individuals must not only have extensive store of knowledge, but also must know how to keep that knowledge current, apply it to solve novel problems, and function as members of a team. Strategies have been developed and practised one by one either to boost-up student's achievement in different academic subjects or to inculcate desirable qualities which make the pupil a worthy social being. The art of teaching can flourish in its full size, if the artist (teacher) pays the greatest attention in making the artistic work interesting, life oriented, problem based, and up to the expectations backed by challenge to teach. Unlike the traditional objectivist approach to teaching that focuses on identifying the elements that the learner must know, the new constructivist approach emphasizes the importance of learning in this context. It is no longer enough for the learner to acquire concepts in isolation, knowledge which often remains inert. Instead, learners must develop and continually modify their understanding of the world as they interact with other learners to solve realistic problems situated in meaningful tasks (Barrows & Tamblyn, 1980). Problem-Based Learning (PBL) is a total approach

* Associate Professor, Dept. of Education, University of Kerala
** M.Ed student, Dept. of Education, University of Kerala

in this regard which provides a framework for students to engage in thinking critically, solving problems enhancing collaborative skills and increasing content knowledge as they explore carefully crafted situations adapted from real world issues.

Mathematics is the science of quantity, measurement and special relations. It deals with quantitative facts, relationships as well as with problems involving space and form. The present syllabus in Mathematics is overstuffed and under nourished. They emphasize the learning of answers more than the exploration of questions, memory at the expense of critical thought, bits and pieces of information instead of understanding in context, recitation over argument, to share ideas and information freely with each other or to use modern instruments to extend their intellectual capabilities. The aims and objectives of Mathematics education at secondary level spelt out were unfortunately not implemented properly. It will be unwise to stick on to the age-old conventional text book method of teaching Mathematics. There is little room for student-initiated questions and independent thought or interaction between students. Above all, there is no scope of understanding the misconceptions found among the students in the conventional method of teaching Mathematics.

The PBL model for teaching is designed in order to foster active learning, and it supports knowledge construction and naturally combines school learning with real life. It creates a learning environment in which teachers coach student thinking and guide student inquiry, facilitating learning towards deeper levels of understanding while entering the inquiry as a co-investigator (Erickson, 1999). So this model is most suitable for teaching Mathematics at secondary level. The Problem Based Learning holds promise for future because the schools of the future will be designed not only for learning but also for thinking. The study is founded upon Piaget's theory of cognitive development. After thoroughly searching through all the related literature, the investigator found that much study was not conducted in India on Problem-Based Learning. Studies conducted in foreign countries clearly shows that PBL surpasses the prevailing methods.

The pertinent question that confronts the teachers is "How can we develop students' skill in thinking during schooling?" Students, when they grow up, have to apply their skill in thinking not only in generating new knowledge, but also in solving day-to-day problems. The significant correlation found between formal thinking and its components warrants the need for the study of determining whether or not the components of formal thinking could be developed by teaching using modern methods. Persons who reach the formal operational stage are capable of thinking logically and abstractly. They can also reason theoretically. Piaget considered this the ultimate stage of cognitive development and stated that although the children would still have to revise their knowledge base, their way of thinking is powerful as it would get. The investigators, realizing this need focuses on "***PROBLEM-BASED LEARNING (PBL) IN MATHEMATICS OF SECONDARY SCHOOL STUDENTS IN RELATION TO THEIR FORMAL THINKING ABILITY***".

OBJECTIVES OF THE STUDY

- To find the achievement in Mathematics of secondary school students using Problem Based Learning (PBL) Model.
- To find the Formal Thinking Ability (FTA) of secondary school students when PBL Model is used.

- To find the extent of Problem Based Learning under different categories of objectives:
  1) Knowledge 2) Understanding
  2) Application 4) Skill
- To find out whether boys and girls differ significantly with respect to Problem-Based Learning in Mathematics.
- To find out whether the Formal Thinking Ability while using PBL differs significantly for boys and girls.
- To find the relation between Problem-Based Learning in Mathematics and Formal Thinking Ability.

METHODOLOGY

- Method - The experimental method was adopted for the collection of data for the present study. The pretest posttest single group design was used.
- Sample selected - The sample consists of 42 students, selected from S.N.H.S.S., Uzhamalakkal, which follows the Kerala Syllabus.
- Tools used - The tools used for the study are

Lesson transcripts based on Problem-Based Learning Model having six phases - forming small groups, presentation of the problem, Brain Storming, Inter Group Discussion, Individual research and engaging in self-directed learning and return to the problem with a new level of understanding.

Formal Thinking Ability Test prepared by the investigator

Achievement Test in Mathematics

- Statistical techniques - The collected data were analyzed by using

Test of significance of difference between means

Pearson's Product Moment Correlation Coefficient

Analysis of Variance

MAJOR FINDINGS

The important finding have been classified and presented below.

Problem-Based Learning in Mathematics

Problem-Based Learning is effective in learning of Mathematics for the secondary school students. The pretest and posttest achievement scores of PBL differ significantly at 0.01 level (CR = 14.46) and the F ratio is found to be 280.98. From these it is clear that the achievement of students in Mathematics is enhanced through Problem-Based Learning. The mean of the gain scores of pretest and posttest were computed which indicated that the students after problem based learning achieved high scores.

The analysis of post test achievement scores of PBL model group based on gender revealed that boys and girls do not differ in the posttest achievement (CR = 0.45, Not significant). Hence it can be concluded that posttest achievement scores were not influenced by the variable gender.

PBL is found to be effective in the learning of Mathematics by students under the categories of objectives, knowledge, understanding, application and skill.

Formal Thinking Ability (FTA) of secondary school students

Problem-Based Learning is effective in improving the formal thinking ability of the secondary school students. When the pretest and the posttest scores of the pupils in the single group

were compared, the difference between their means was found to be statistically significant (CR =15.89; significant at 0.01 level). The analysis of variance scores for pretest and posttest scores of pupils in the single group also showed significant difference (F = 89.04).

The analysis of posttest achievement scores of FTA based on gender revealed that boys and girls do not differ significantly with respect to their formal thinking ability.

The relation between Problem-Based Learning in Mathematics and students' Formal Thinking Ability

From the correlation analysis, the correlation between the posttest scores of PBL and FTA is found to be 0.2968 which is greater than the table value (significant at 0.05 level). The coefficient of correlation obtained for the gain scores of PBL and Formal Thinking Ability in Mathematics for the total sample also is significant at 0.05 level (r = 0.1956). Thus there is significant relation between Achievement in Mathematics and students' Formal Thinking Ability when Problem-Based Learning is used.

IMPLICATIONS OF THE STUDY

The Problem-Based Learning is a new instructional strategy which is based on problem-solving approach of learning Mathematics. Here the students themselves meet the problem, understand the problem, explore the content and resolve the problem. The result of the study proved that the Problem-Based Learning Model of teaching is effective for the achievement in Mathematics and development of Formal Thinking Ability of secondary school students.

The findings of the study show that the students improve their ability to comprehend, synthesize and evaluate ideas and in this way improved their achievements in higher level objectives like application and skill. Since the students are engaging in the situation of the problem, they are active, pleasant and responsible throughout the learning process. They are automatically elevated to high esteem of self satisfaction because they create through problem-solving the knowledge that they expected to study according to their syllabus. Also the present study has shown that the gender has very little influence on the achievement and development of Formal Thinking Ability.

The Problem-Based Learning Model has great relevance for teachers who intended to improve their instructional method. Since the teacher has dual role i.e. as a cognitive coach and a problem-solving colleague he/she should develop the habit of leading children to acquire ideas and knowledge through their own searching and solving process. It helps teachers to cultivate in students the power of observation, engage them in activities, emphasize their team approach, cultivate their searching ability, memorization and creative thinking, their ability to formulate hypotheses, test hypothesis and interpreting and making conclusions. All types of higher level thinking can be developed through this model. Since they can develop Formal Thinking Ability, students can perform better later in their adult life. If sufficient practice is given to teachers to adopt this model for teaching, the students will, after continuous practice in schools, become initiators, creative thinkers, technical competers, good managers, innovators and discoverers in their later life.

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nvksdcollege@rediffmail.com

LIFE SATISFACTION AND JOB INVOLVEMENT OF PRE- PRIMARY SCHOOLTEACHERS

* Dr. S. Sreelatha

ABSTRACT

The present investigation tries to find out the significant relationship, if any, between life satisfaction and job involvement of pre-primary schoolteachers. Life satisfaction scale and job satisfaction scale validated by the investigator were used to collect data. This study was conducted on a sample of 300 pre- primary schoolteachers working in various pre-primary schools of Kanyakumari district. The results have shown that a considerable proportion of pre-primary schoolteachers possess average level of life satisfaction and job involvement. There is positive and significant relationship between life satisfaction and job involvement of pre-primary schoolteachers.

INTRODUCTION

Life satisfaction is the degree to which a person positively evaluates the overall quality of his/her life as a whole. Job involvement is the degree to which an employee identifies with his job, actively participates in it and considers his job performance important to his self-worth.Job involvement is an important motivational variable for any organization.

The success or failure of the early childhood education largely depends upon the effectiveness of pre-primary schoolteachers .The competency and success in work depends on the involvement in work. Those who are satisfied in their lives can only involve themselves in their work very effectively.Pre -primary schoolteachers shape the destiny of the children and thereby the nation. Hence the study titled 'Life satisfaction and job involvement of pre-primary schoolteachers' was conducted.

OBJECTIVES

1 To measure the life satisfaction and job involvement of pre -primary schoolteachers.

2 To find out the effect of background variables namely, locale, type of management,and years of experience on life satisfaction and job involvement of the pre -primary school-teachers.

3 To find out whether there is any significant relationship between life satisfaction and job involvement of Pre-primary schoolteachers

METHODOLOGY

a) Method adopted :

Normative survey method was adopted for this study.

b) Sample used :

A sample of 300 pre-primary schoolteachers working in Kanyakumari district was used for the study.

* Assistant Professor in Early Childhood Education, N.V.K.S.D.College of Education, Attoor.

c) Tools used :

Life satisfaction scale and Job involvement scale developed and validated by the investigator

d) Statistical techniques used :

Arithmetic mean, t-test ,and correlation coefficient were used for the analysis of data.

RESULTS AND DISCUSSION

1. Level of life satisfaction and job involvement of pre-primary schoolteachers.

Table 1

Life Satisfaction	Count	Percentage
Low	42	14
Average	198	66
High	60	20
Total	300	100

From table 1, it is clear that majority of pre-primary schoolteachers possess average level of life satisfaction.

Table 2

Job involvement	Count	Percentage
Low	51	17
Average	213	71
High	36	12
Total	300	100

om table 2, it is clear that majority of pre-primary schoolteachers possess average level of job olvement.

Comparison of scores of life satisfaction of pre-primary schoolteachers with reference to locale, e of management and teaching experience.

Table 3

Variable	Category	No	Mean	S.D	t value	P value	Level of Significance
Locality	Rural	189	45.28	6.31	2.77	0.006	0.01
	Urban	111	47.14	5.16			
Type of management	Government	100	46.02	5.91	0.11	0.91	N.S
	Private	200	45.94	6.01			
Teaching Experience	Below 10 years	111	46.79	5.61	1.88	0.06	N.S
	Above 10 years	189	45.48	6.14			

Results presented in table 3 show significant differences between rural and urban pre -primary schoolteachers in their life satisfaction (t-2.77, P<0.01). When comparing the mean values, it is evident that urban primary schoolteachers are more satisfied with their lives compared to their counterparts in rural areas. No significant difference is noted between government and private schoolteachers as well as less experienced and more experienced pre-primary schoolteachers in their life satisfaction.

3. Comparison of scores of job involvement of pre-primary schoolteachers with reference to locality, type of management and teaching experience

Table 4

Variable	Category	No	Mean	S.D	t value	p value	Level of Significance
Locality	Rural	189	114.10	16.59	4.12	0.001	0.01
	Urban	111	121.21	12.97			
Type of management	Government	100	113.56	16.28	2.44	0.015	0.05
	Private	200	118.32	15.22			
Teaching Experience	Below 10 years	111	116.92	14.43	0.11	0.87	N.S
	Above 10 years	189	116.62	16.45			

From table 4, it is clear that there exist significant difference between rural and urban (t-4.12,p<0.01),and government and private school (t-2.44,p<0.05) pre-primary schoolteachers on their job involvement. Teaching experience has no influence on their job involvement.

4. Correlation between life satisfaction and job involvement of pre-primary schoolteachers.

Table 5

Variable	Category	r	Level of Significance	Verbal interpretation of 'r'
	Total Sample	0.614	0.01	Substantial
Locality	Rural	0.551	0.01	Substantial
	Urban	0.566	0.01	Substantial
Type of management	Government	0.498	0.01	Substantial
	Private	0.602	0.01	Substantial
Teaching Experience	Below 10 years	0.674	0.01	Substantial
	Above 10 years	0.481	0.01	Substantial

From table 5 it is clear that there exists positive and substantial correlation between life satisfaction and job involvement of pre-primary schoolteachers. For the subsamples also positive substantial relationship is noted between life satisfaction and job involvement of preprimary schoolteachers.

CONCLUSION

Majority of pre-primary schoolteachers have average level of life satisfaction and job involvement. Urban pre-primary schoolteachers possess more life satisfaction and job involvement than rural pre-primary schoolteachers. Teaching experience has no significant influence in the life satisfaction and job involvement of pre-primary schoolteachers.

The study reveals that there exists positive and significant correlation between life satisfaction and job involvement of pre-primary schoolteachers. That is,job involvement depends on the life satisfaction of pre-primary schoolteachers. Hence measures should be taken to improve the quality of life of pre-primary schoolteachers by providing better salary and favorable working environment which make them satisfied with their lives and result in better job involvement

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nvksdcollege@rediffmail.com

ROLE OF NATIONAL PROGRAMME OF NUTRITIONAL SUPPORT TO PRIMARY EDUCATION (MIDDAY MEAL SCHEME) IN UNIVERSALISATION OF ELEMENTARY EDUCATION: A TEACHER PERCEPTION

* Ms. Monika Kapoor

ABSTRACT

The present study was conducted on 120 primary schoolteachers working in 36 Government Primary Schools of Punjab state. The tool used was a self made Questionnaire to study the teachers' perception towards midday meal scheme. Results indicate that midday meal scheme is helpful in the Universalisation of Elementary Education and also it has been perceived to have a positive impact on the improvement in nutritional status of child.

INTRODUCTION

Malnutrition is widely prevalent among growing children in our country. Major deficiencies among elementary schoolchildren are protein energy malnutrition, iron deficiency anemia, vitamin A deficiency and Iron deficiency disorder (IDD).Malnutrition not merely gives rise to morbidity and mortality, and prevents a child from developing into fully functional adult, it adversely affects Universalisation of Elementary Education (UEE) in terms of:

1. A malnourished child is less likely to attend school regularly.
2. Even if such a child does attend school, he finds it difficult to concentrate and participate in the teaching-learning activities well enough. He, therefore, tends to dropout, inter alia, because of the inability to cope with it.

The Midday Meal Scheme, a popular name for school meal programme, involves provision of free of cost lunch to schoolchildren on all working days. The key objectives of the programme are:

a) To increase enrolment, retention and to tone up the learning abilities of the beneficiaries, especially of children belonging to poor and downtrodden sections of society;

b) To provide nutritious meal to the school-going children to achieve the goal of Healthy mind in Healthy body;

c) To promote friendship and feelings of common brotherhood among the children belonging to different caste, colour and creed by providing meals to them together and also to increase their retention in schools.

* Lecturer In Education
Lala Hans Raj Memorial College Of Education, Moga, Punjab

Central Assistance under the MidDay-Meal Scheme consists of a) Free supply of foodgrains Wheat/Rice per child per school day from nearest Food Corporation of India (FCI) Godown @ 100 Grams for Primary @ 150 Grams for Upper Primary Classes. The food grains were transported from nearest Food Corporation of India (FCI) Godown to the primary schools. Its cost is reimbursed by the Government of India. b) Cost of Cooking includes cost of ingredients e.g. pulses, vegetables, cooking oil and condiments etc. It also includes cost of fuel and wages/ remuneration payable to personnel or money payable to an agency (SHG, VEC) responsible for cooking. The budget allocation under the programme was 7359.15 crore against which the total expenditure incurred was Rs.6937.79. A total number of 11.04 crore children (7.85 crore in primary and 3.19 crore in upper primary stages) have been benefited under the programme during 2009-10.

A review of some pertinent researches in this vital area indicate that midday meal played a positive role in enrolment and retention of children in schools. (Chandrashekhran, 1981; Rao, 1985; Ambasht and Rath, 1995; NCERT, 2000; Bisht, 2007). In a significant study on the impact of mid-day meal, Sen (2003) reported that school meal programme has made promising start around the country but the quality issues needed urgent attention. The report inferred that improved Mid-Day Meal Scheme could transform school education, child nutrition deficiency and social equity. Since the programme is, in its implementation, facing a large number of problems (both administrative and financial), it was thought worthwhile to study the programme in its implementation and utility.

OBJECTIVE

To study teachers' perception towards National Programme of Nutritional Support to Primary Education (Mid-Day Meal Scheme) in District Moga of Punjab State.

METHOD

In the present study survey technique under descriptive method of research was used.

SAMPLE

In the present study random sampling technique was used. The sample in the present study covered 36 Government Primary schools in district Moga of Punjab state. A sample of 120 primary schoolteachers were selected in order to study their perception regarding MidDay Meal Scheme.

TOOL

Questionnaire to study the teachers' perception towards the MidDay Meal Scheme.

RESULTS

The viewpoint and perceptions of teachers with respect to implementation and utility of Mid-Day Meal Scheme are reported in table 1.

Table

Teacher Response to Implementation and Utility of Mid-Day Meal

No.	Issue	Yes	No	Can't say
I.	**Implementation**			
1.	Balanced and Nutritional Diet	87.14	7.14	5.71
2.	Protection from Malnutrition	70.00	13.00	17.00
3.	Improvement in Nutritional Status of child	58.00	32.00	8.00
4.	Good Quality of Mid-Day Meal	58.00	7.00	35.00
5.	Good arrangement for cooking	97.00	3.00	—
6.	Community Support	23.00	77.00	—
7.	Improvement in implementation since inception	64.00	36.00	—
II.	**Utility**			
1	Helpful in Universalisation of Elementary Education	70.00	30.00	—
2.	Increase in enrolment	18.00	35.00	7.00
3.	Improvement in attendance	40.00	31.00	29.00
4.	Reduction in Drop-out	—	—	—
5.	Learning level of Disadvantaged	37.00	16.00	47.00
6.	Inculcation of healthy habits	91.00	9.00	—
7.	Elimination of Caste Discrimination	84.00	14.00	2.00
8.	Wastage of time of teachers and students	70.00	30.00	—
9.	Students' liking for Mid-Day Meal	80.00	7.00	13.00
10.	Variety in Menu	60.00	29.00	11.00
11.	Inculcation of Moral Values	80.00	13.00	7.00

It is evident from table that more than 80% primary schoolteachers consider that midday meal is balanced and nutritious because the quality of wheat, rice and other ingredients used in the preparation of meal is satisfactory. Generally the teachers admitted that midday meal is nutritious and balanced diet and that it can protect the children from malnutrition and other diseases caused due to malnutrition. It may be noted as well that 58% teachers responded that quality of midday meal is good and it helps in the enhancement of nutritional status of the children. Almost of all the teachers, 97% teachers admitted that there is good arrangement of cooking.

From the utility point of view table 1 reveals that 70% teachers' responses were in favour that midday meal is helpful in Universalisation of Elementary Education. More than 90% teachers agreed that midday meal scheme is quite helpful in the inculcation of healthy hygienic habits among children. These include washing hands, cutting nails, washing their plates properly etc. 84% teachers revealed

that this scheme is also helpful in the elimination of caste discrimination. However it may be noted that majority of teachers also opined that the mid-day meal is wasting the teaching-learning time of teachers and students, though they favoured the view that midday meal scheme inculcates moral values among students.

CONCLUSION

The major findings of the present study with respect to implementation of midday meal scheme in Punjab and its utility as per the objectives of the programme are given below:

1. Implementation of midday meal scheme has a positive impact on the improvement in nutritional status of child. It protects them from diseases caused due to malnutrition. It was also found that there is good arrangement of cooking in mid-day meal scheme because majority of teachers (97%) are in favour of this view.
2. The scheme is quite helpful in the Universalisation of Elementary Education because it has increased the enrolment and even attendance of students. It was also found that midday meal scheme is able to eradicate discrimination based on caste and other factors. Majority of teachers responded that the scheme develops hygienic values in the children.
3. In case of type of food, the children prefer cooked food as compared to semi-cooked or raw food.
4. Separate human resources, i.e. cooks and other helpers should be there in adequate number so that teachers can devote their time only for teaching-learning process.
5. The better working of this scheme can be ensured by regular inspections by the higher authorities as well as community members either through PSVK and VSC.
6. The community support need to be strengthened and parent-teacher associations and school education committees should come forward to play their role more positively.

Since the scheme has provided a lot of social-cum-nutritional support to educability, it needs to be further strengthened for accomplishing the goal of UEE.

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nvksdcollege@rediffmail.com

STRESS TOLERANCE AMONG ADOLESCENTS BASED ON GENDER AND AGE GROUP

* Bindu.Gouri.V.P
** Dr.M.Sadananthan

ABSTRACT

To thrive in stressful situations and to cope with uncertainty, stress tolerance, a component of emotional intelligence, is very essential. Persons with low stress tolerance experience more stress. This study explores the dimensions of stress tolerance and its differences with respect to gender and age group. Cultivating inner stress tolerance is an effective strategy to ward off the negative impact of stress.

INTRODUCTION

Adolescence represents a period of heightened vulnerability resulting from the many age-related physiological and psychological transitions. Anxiety and stress are inevitable among adolescents as they have to meet various demanding situations like independence from family, adjustment to diverse situations and meeting everyday challenges. Unchecked stress is undeniably damaging. According to Lazarus (1978) stress is a relational concept, a balance between demands and the power to deal with them. Stress is defined as the demands that tax or exceed available resources (internal and external) as cognitively appraised by the person involved. It is nearly impossible to avoid stress completely. Different people can tolerate different levels of stress which in turn depends on the quality of relationships, general outlook on life, emotional intelligence and genetics.

The ability to negotiate and cope with stressors has been associated with children's development, emotional adjustment and well-being (Carson, Swanson, Cooney, Gillum, 1992). Inability to handle stress effectively in childhood has been associated with adjustment problems, anxiety disorders, antisocial behavior and psychosomatic illness (Carson et al 1992). If an individual perceives his ability to cope as weak, and sees environmental demands heavy, the level of stress he experiences will be high. If the self-perceived powers are strong, then those same demands may be readily tolerated and the level of stress experienced will be comparatively low (Jitender, 2007). Coping refers to active efforts to master, reduce, or tolerate the demands created by stress. One's coping strategies determine whether stress has any positive or negative effect. People differ in their stress tolerance and response to the same stressful situation, hence the effect of stress varies from person to person. Stress Tolerance refers to the person's ability to endure stress, strain

* Asst.Professor, N.V.K.S.D.College of Education, Attoor.
** Former Professor and Head, Department of Education, M.S.University, Tirunelveli.

and pain without becoming seriously impaired (Carson and Butcher, 1998). Thus it is the ability to handle emotionally charged situations and to resist burnout in demanding environments. Emotional intelligence of adolescents is positively related to frustration tolerance and hence people with a high emotional intelligence can tolerate setbacks to a great extent (Sobha 2006).

OBJECTIVES

1) To find out the difference, if any, between male and female adolescents as to their stress tolerance and its dimensions.
2) To find out the significant difference among early, middle and late adolescents in stress tolerance and its dimensions.

METHOD

The study employed Normative Survey method.

SAMPLE

The sample comprised 1000 schoolgoing adolescents in the age range of 12-18, representing early (aged 12-14), middle (aged 15-16) and late adolescents (aged 17-18) of Tirunelveli and Kanyakumari Districts of Tamil nadu. Stratified random technique was employed.

TOOLS

Stress Tolerance Scale prepared and validated by the investigator was used for data collection. This five point scale was designed to measure the stress tolerance under five dimensions such as domestic stress tolerance, academic stress tolerance, examination stress tolerance, personal stress tolerance and social stress tolerance. Validity of the tool was established and its reliability was found to be 0.74 by Split Half method.

RESULTS AND DISCUSSION

The results of the present study are presented in Tables 1 and 2.

Table 1

Comparison of Stress Tolerance of Boys and Girls

Stress tolerance	Gender	N	M	SD	t value	Level of significance
Familial stress tolerance	Boys Girls	517 483	19.54 19.77	3.79 3.80	0.96	NS
Classroom stress tolerance	Boys Girls	517 483	17.75 17.39	4.0 4.0	1.40	NS
Examination Stress tolerance	Boys Girls	517 483	19.16 18.33	3.57 3.65	3.61	0.01
Personal stress tolerance	Boys Girls	517 483	18.24 17.35	3.58 3.64	3.88	0.01
Social stress tolerance	Boys Girls	517 483	19.83 20.04	3.52 3.74	.932	NS
Total stress tolerance	Boys Girls	517 483	94.45 92.87	10.53 10.17	2.42	0.05

It is evident from table 1 that boys and girls do not differ significantly in their stress tolerance with respect to familial stress tolerance, classroom stress tolerance and social stress tolerance. However boys and girls differ significantly with respect to examination stress tolerance and social stress tolerance. Computed t values are greater than the table value at 0.01 level. When the overall stress tolerance is considered the boys and girls differ significantly in their stress tolerance. The t value obtained is greater than the table value and is statistically significant at 0.05 level.

Table 2

Summary of ANOVA for different dimensions and total Stress Tolerance among Early, Middle and Late adolescents

Variable	Source of variation	Sum of squares	df	Mean squares	F	Level of significance
Familial stress tolerance	Between groups Within groups	110.38 14275	2 997	55.19 14.34	3.85	0.05
Classroom stress tolerance	Between groups Within groups	259.34 15740.72	2 997	129.67 15.78	8.21	0.01
Personal stress tolerance	Between groups Within groups	4.127 13227.38	2 997	2.064 13.267	0.156	NS
Social stress tolerance	Between groups within groups	46.96 13126.31	2 997	23.48 13.16	1.78	NS
Total stress tolerance	Between groups Within groups	705.8 107147	2 997	352.91 107.47	3.28	0.05

One-way analysis of variance (ANOVA) was employed to find out the significance of mean difference in stress tolerance among early, middle and late adolescents. Data makes evident the mean scores of stress tolerance and its dimensions for the three categories of adolescents. It can be observed from Table 2 that the calculated 'F' value for Familial stress tolerance is higher than the required table value at 0.05 level of confidence (df 2,997). It means there is significant difference in familial Stress tolerance with respect to the different age groups of adolescents. It reflects that the mean familial stress tolerance scores of early, middle and late adolescents differ significantly.

From table 2 it can also be concluded that the computed 'F' value for classroom stress tolerance is higher than the critical value of 'F' at 0.01 level for 2 and 997 df. So there exist significant differences among the three groups in this dimension of stress tolerance. It can also be understood from the above table that the calculated 'F' obtained is less than the critical value of 'F' for 2 ,997 df at 0.05 level for examination stress tolerance personal stress tolerance and social stress tolerance. Hence the three groups do not differ in examination, personal and social stress tolerance.

However, for total stress tolerance, the table 2 indicates that the calculated'F' obtained while comparing early, middle and late adolescents was beyond the table value for 2 and 997 df at 0.05 level of confidence. Hence there exist significant differences among these groups.

CONCLUSION

1) There exists significant difference between male and female adolosents in their stress tolerance with respect to examination stress tolerance, personal stress tolerance and total stress tolerance. Males are found to have greater stress tolerance than females.

2) There is no significant difference between male and female adolescents in their stress tolerance with respect to familial, classroom and social situations.

3) On comparing early, middle and late adolescents, a significant difference was found in their stress tolerance regarding familial, classroom and total stress tolerance.

4) The three categories of adolescents did not differ significantly in their stress tolerance for the dimensions examination stress tolerance, personal stress tolerance and social stress tolerance.

EDUCATIONAL IMPLICATIONS

The difference in stress tolerance depends on various factors like coping with the resources, stress perception, personality factors and social support. Teachers should identify adolescents with low stress tolerance and help to handle stress effectively to become positive and productive individuals. Training to develop high stress tolerance limits shall make the students function successfully at school with proper mental health. Intervention or counseling services for developing better stress tolerance level and emotional intelligence may also help in stress management.

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nvksdcollege@rediffmail.com

THE EIGHT HUMAN INTELLIGENCES IN THE CLASSROOM

• Dr.Indu.H

ABSTRACT

This study focuses on eight multiple intelligences. It examines whether students differ in their multiple intelligence based on gender, locality and type of school. The subjects of this study comprised 504 class XI students from eight different schools in Gobichettipalayam. Multiple intelligence scale which comprises 64 items was used to assess the students' multiple intelligence. Results showed that girls demonstrated a much higher preference for the linguistic, logical-mathematical, interpersonal, intrapersonal and naturalistic intelligence. The rural students were better in linguistic, musical and naturalistic intelligences and the government school students were better in linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic and naturalistic intelligences.

INTRODUCTION

The topic of intelligence remains hotly debated in psychology (Mackintosh, 1998). Intelligence is the ability to respond successfully to new situations and the capacity to learn from one's past experiences (Gardner, 1983). In a school or classroom practising brain-based learning, the importance of different intelligences is taken for granted.

An effective education builds a bridge between the content being taught and the students in the classroom. On the one hand, educators need to recognize the difficulties students face in attaining genuine understanding of important topics and concepts. On the other hand, educators need to take into account the differences among minds and, as far as possible, fashion an education that can reach the infinite variety of students (Gardner 1999).

Howard Gardener's multiple intelligence has left its indelible mark on pedagogical canon now for more than a quarter of a century. An awareness of multiple intelligence will be more effective in stimulating teachers to find more ways of helping all students in their classes. Thus, individuals should be encouraged to apply their preferred intelligences in learning. Hence, multiple intelligences are needed to improve the knowledge, interest, skills, life styles and self confidence of students.

This study had three major aims. First, it sought to consider the gender differences within specific types of intelligence. The second aim of this study was to explore the influence of locale of the students on their multiple intelligences. Third, this study attempted also to examine the differences in multiple intelligences of students

* Assistant Professor in Physical Science, Faculty of Education, Avinashilingam University for Women, Coimbatore

studying in Government, Government aided and Private schools.

SAMPLE In total, 504students (252 males; 252 females) from eight different schools in Gobichettipalayam taluk in Tamil Nadu took part in this study.

TOOLS USED

Multiple Intelligence Scale (Indu & Rajeswari, 2009)

The Multiple Intelligence Scale used in this study was constructed based on Gardener's multiple intelligence theory.

Comparison of multiple intelligence based on gender

Multiple intelligence of boys and girls were compared using the t-test and the values obtained are given in table 1.

Table 1

Gender and Multiple Intelligences

Multiple intelligences	Boys (N_1= 252)		Girls (N_2 = 252)		t-value
	Mean	SD	Mean	SD	
Linguistic	26.36	3.69	27.86	3.59	4.61^{HS}
Logical mathematical	26.38	4.36	28.27	3.49	5.35^{HS}
Spatial	26.08	4.71	27.85	4.01	4.54^{HS}
Musical	22.23	6.41	24.70	5.84	4.51^{HS}
Bodily-kinesthetic	27.31	4.86	26.95	4.51	0.87^{NS}
Interpersonal	25.80	4.35	27.09	4.16	3.42^{HS}
Intrapersonal	27.72	3.61	29.55	2.88	6.29^{HS}
Naturalistic	27.17	4.14	29.08	3.38	5.64^{HS}

NS- Not Significant, HS- Significant at 0.01 level SD- Standard Deviation

From the above table, it is evident that there is significant difference between boys and girls in linguistic, logical-mathematical, spatial, musical, interpersonal, intrapersonal and naturalistic intelligences. The mean value shows that girls tend to have more linguistic, logical-mathematical, spatial, musical, interpersonal, intrapersonal and naturalistic intelligence than boys..

Comparison of Multiple Intelligences based on locale of students

The comparison of multiple intelligence scores of students from rural and urban areas were carried out and the results are given in table 3.

Table 3
Locale and Multiple Intelligence

Multiple intelligences	Rural (N_1=409)		Urban(N_2 = 95)		t-value
	Mean	SD	Mean	SD	
Linguistic	27.32	3.85	26.23	2.92	2.58^{HS}
Logical-mathematical	27.41	4.05	26.97	4.11	0.93^{NS}
Spatial	26.92	4.49	27.13	4.32	0.40^{NS}
Musical	23.99	6.09	21.21	6.45	3.96^{HS}
Bodily–kinesthetic	27.29	4.41	26.43	5.71	1.62^{NS}
Interpersonal	26.56	4.24	25.94	4.55	1.26^{NS}
Intrapersonal	28.65	3.42	28.58	3.25	0.17^{NS}
Naturalistic	28.30	3.71	27.37	4.55	2.09^{S}

S-Significant at 0.05 level

The analysis of the above table clearly denoted that there is significant difference in multiple intelligences of students coming from rural and urban areas. Significant differences are seen in linguistic, musical and naturalistic intelligences of which it is highly significant for linguistic and musical intelligences.

Type of schools and multiple intelligences

An attempt was made to study the multiple intelligences of students of government, government- aided and private schools and the ANOVA results are presented in table 4.

Table 4
Type of schools and Multiple Intelligence

Multiple intelligences	Source of variation	Sum of Squares	df	Mean Square	**F-value**
Linguistic	BG WG Total	312.31 6182.35 6494.67	2 501 503	156.16 12.34	12.65^{HS}
Logical-Mathematical	BG WG Total	127.89 8318.75 8446.64	2 501 503	63.94 16.60	3.631^{S}
Spatial	BG WG Total	241.08 9781.83 10022.90	2 501 503	120.54 19.53	6.343^{HS}

Musical	BG WG Total	958.43 18710.77 19669.21	2 501 503	479.22 37.35	11.408^{HS}
Bodily-Kinesthetic	BG WG Total	148.05 10362.58 10510.64	2 501 503	74.03 20.68	3.948^{S}
Interpersonal	BG WG Total	122.59 9294.36 9416.95	2 501 503	61.29 18.55	2.778^{NS}
Intrapersonal	BG WG Total	53.08 5760.85 5813.93	2 501 503	26.54 11.49	2.373^{NS}
Naturalistic	BG WG TOTAL	350.79 7343.58 7694.37	2 501 503	175.40 14.66	10.58^{HS}

BG- Between group, WG- Within group,

The ANOVA result shows that the calculated F-ratio is higher than the table value (4.65) at 1% level of significance for linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic and naturalistic intelligences. As the F-value is significant, Duncan's multiple range test method was used to find the differences between the linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic and naturalistic intelligences of students in different types of schools.

Multiple comparisons (Duncan's test) of multiple intelligences based on type of schools.

Comparisons of multiple intelligences among the three types of schools were made by Duncan's test and results are given in table 5.

Table 5

Multiple intelligences and type of schools

Linguistic intelligence			
School type	N	1	2
Government	168		28.25
Government aided	168	26.40	
Private	168	26.86	
Logical-mathematical intelligence			
School type	N	1	2
Government	168		28.03

Government aided	168	26.88	
Private	168	27.07	
Spatial intelligence			
School type	N	1	2
Government	168		27.95
Government aided	168	26.67	
Private	168	26.35	
Musical intelligence			
School type	N	1	2
Government	168		25.32
Government aided	168	22.01	
Private	168	23.05	
Bodily-kinesthetic intelligence			
School type	N	1	2
Government	168		27.77
Government aided	168	27.08	
Private	168	26.45	
Interpersonal intelligence			
School type	N	1	2
Government	168		27.09
Government aided	168	25.89	
Private	168	26.39	
Naturalistic intelligence			
School type	N	1	2
Government	168		29.09
Government aided	168	27.05	
Private	168	28.23	

From the above table, the post test scores indicated that the mean score obtained by government school students is higher than the students of government, aided and private schools for seven intelligences namely linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal and naturalistic intelligences

FINDINGS:

- The differential analysis showed that the girls demonstrated a much higher preference for the linguistic, logical-mathematical, interpersonal, intrapersonal and naturalistic intelligence than the boys.
- The differential analysis showed that there is a significant difference in multiple intelligences of students coming from rural and urban area and the rural students were found to be better in linguistic, musical and naturalistic intelligences than urban students.

- One-way analysis of variance of multiple intelligences of students studying in different types of school namely government, government aided and private revealed that there is a significant difference in linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic and naturalistic intelligences and Duncan's test result brought to light the fact that government school students are better in linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic and naturalistic intelligences than their counterparts in government aided and private schools.

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* Sheela .P
** Dr.Lawrence Mary.A

ABSTRACT

This paper discusses various aspects and approaches that B.Ed College Libraries employ to provide the information sources and services available to users. The library has to render the package of services like Selective Dissemination of Information (SDI), Current Awareness Service (CAS), books, journals, indexing and abstracting, inter-library loan, networking of institutions, retrieval of information through reference services. User survey should be conducted quite often to improve library services.

INTRODUCTION

It is well known that today we are living in an information era wherein information as a commodity is increasingly plays a central role in our daily life. Information is a vital national resource. It plays a major role in the socio-economic progress of a country. Present world scenario can rightly be defined as "information explosion" which is a continuously increasing one. Information is used for further investigation, research and development and when it is achieved it again becomes information for further research.

'Terminology of Documentation' of UNESCO states that information source means, 'the source from which an individual gets information to fulfil his/her needs'. In fact, the foundation of any discipline is its literature. The librarians and information scientists provide information services on the basis of the collection of various types of information sources.

Types of Information Sources

The information sources have been divided into two categories, namely documentary and non-documentary. The documentary sources are mainly the printed sources and due to advances in technology, many of them are now available on CD-ROMs.

Dictionaries, encyclopedias, directories, year books, manuals, biographical sources, geographical sources, etc are the examples of documentary sources of information.

There are other sources of information known as non-documentary sources, which provide the information immediately required by any user. The non-documentary sources can be categorized into a) Human resources b) Institutional resources c) Mass media and d) Audio-visual resources.

* Librarian, NVKSD College of Education, Attoor.
** Librarian (S.G), TDMNS College, T.Kallikulam.

Uses of Information Sources

The following are the important uses of information sources. They are:

1. To keep abreast of the latest information in relevant areas.
2. To avoid duplication of research in the same area.
3. To enable the researcher in getting more information in his chosen area.
4. To furnish background information to understand a subject, new or unfamiliar.
5. To supply necessary answers to specific queries.
6. To offer a fruitful path of information.

OBJECTIVES OF THE STUDY

1. To examine the different factors which facilitate information sources and services to the users of B.Ed. College libraries in Kanyakumari District.
2. To determine the major information sources and services used by the respondents.
3. To find out the level of satisfaction on current resources.
4. To identify the constraints faced by the users in using and searching information sources in library.

METHODOLOGY

For the purpose of accomplishing above stated objectives a questionnaire was prepared to collect primary data from the users of the B.Ed. College libraries in Kanyakumari district.

In this study descriptive survey method was adopted. Questionnaires were distributed among the respondents of the selected colleges for the study. From each college 10 library users were selected. Totally 50 respondents were selected for the study. The collected questionnaires were edited, coded, tabulated and analyzed.

ANALYSIS OF DATA

A simple percentage analysis was carried out for the major part of the data analysis.

Preferred format of Information sources used

Table 1

Category	No of respondents	Percentage
Printed source	27	54.00
Electronic source	0	0.00
Both	23	46.00
Total	**50**	**100**

Source: Primary data

In the table 1 the result reveals that 54 percent of users want to use only print version of information sources and 46 percent of users use both printed and electronic sources.

Rating of General book collection

Table 2

Category	No of respondents	Percentage
Excellent	12	24.00
Good	33	66.00
Fair	1	2.00
Poor	2	4.00
No opinion	2	4.00
Total	**50**	**100**

Source: Primary data

The table 2 highlights the level of satisfaction of the respondents regarding the general book collection. 24 percent of the library users felt that the general book collection is excellent, 66 percent of the users marked the library's general book collection as good. 2 percent of the users have the opinion that the general book collection is fair, only 4 percent of the users' opinion is that the general book collection is poor. Most of the users' opinion is that the prevailing library facility is good.

Orientation to use the library

Table 3

Category	No of respondents	Percentage
Often	28	56.00
Some times	8	16.00
Seldom	9	18.00
Never	5	10.00
Total	**50**	**100**

Source: Primary data

In table 3, 10 percent respondents said that they were never instructed on how to use the library. But the majority (56 percent) responded positively that they got instruction from the library staff on how to use the library.

Availability of Internet facilities in the respective college libraries

Table 4

Internet facility	No of respondents	Percentage
Available	18	36.00
Not available	32	64.00
Total	**50**	**100**

Source: Primary data

In the table 4, 36 percent of the respondents said that their colleges do provide internet facilities for them and 64 percent said that their colleges do not provide internet facilities for searching the information.

Satisfaction with overall functions of library

Table 5

Satisfaction level	No of respondents	Percentage
Very satisfied	9	18.00
Dissatisfied	3	6.00
Satisfied	38	76.00
Total	**50**	**100**

Source: Primary data

The data on the overall satisfaction of the library services as revealed in table 5 shows that most of the users , 76 percent, are satisfied with the overall function of the library. Whereas 6 percent are not satisfied with the overall functions of the library, and 18 percent are very much satisfied with the overall functions of the library.

Problems faced while using the library

Table 6

Difficulties/barriers	No of respondents	Percentage
Resources needed were not available	14	28
Insufficient quantities of materiel	24	48
Library hours	29	58
Staff inability to help on request	15	30
Lack of time	28	56

Source: Primary data

Table 6 shows that 58 percent of users have faced problems during library hours, followed by 56 percent users indicating "lack of time" as the main problem while using the library. 48 percent respondents are troubled about lack of insufficient quantities of material and 30 percent of users are faced with 'staff inability to help on request' and 28 percent of users are faced with the problem of 'resources needed were not available'.

CONCLUSION

The results of this survey convey that more than 50 percent of the users are aware and actively using the information sources and services available in their college libraries. Most of the users preferred the printed text books for academic curriculum. The present study reveals a positive role of the college libraries.

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N.V.K.S.D College of Education, Attoor
nvksdcollege@rediffmail.com

B.Ed. TRAINEES' PERCEPTION OF BLENDED LEARNING IN TEACHING AND LEARNING OF MATHEMATICS

* K.Thiyagu

ABSTRACT

The concept of blended learning has been with us for some time and really builds on the good practice of blending teaching and learning styles for the benefit of the learner. This is as true when e-learning and online learning are added to the mix, as it would be for integration of practical work. The potential of new technologies can be maximised when you see how best to blend e-learning with existing programmes to the benefit of learners. The main aim of the study is to find out the B.Ed. trainees' perceptions of blended learning in teaching and learning of Mathematics. Survey method is employed for this study. The investigator has chosen 150 mathematics optional B.Ed. trainees for the study. The findings have indicated that (a) 16% of B.Ed. Mathematics trainees have low level, 67.3 % have average level and 16.7% of them have high level of perception concerning b-learning. The mean of the perception of blended learning is 148.46 and standard deviation is 15.92. It is inferred that more number of B.Ed. trainees have moderate level of perception of blended learning. (b) There is no significant difference in perception of blended learning among the B.Ed. trainees with respect to their gender.

INTRODUCTION

With the advancement of technology, it is possible to revolutionize the way people learn and to present the information to them. Most of the traditional instruction which students receive is from the instructor-led approach. Usually in a traditional classroom setting, students have access to the experts, involved in questions and discussion, exposed to social interaction and have the opportunity to learn from others. Some students prefer an individualized or less structured environment. In other words, they need self-paced learning material. At the same time, educators are now faced with the challenges of integrating traditional and emerging technology as to balance various students' learning styles.

Students experience difficulties in studying Mathematics since they have to understand the theories and memorize the formulae. In certain cases, they need to visualize the picture when applying those theories and formulae. Studies have shown attitude as one of other reasons for learning mathematics becoming difficult. Most of these experimental methods of teaching mathematics have not shown that traditional methods can affect students' attitude towards learning mathematics. It is also mentioned that technological aids such as calculators and computers have an effect on

* Assistant Professor, Dr.Sivanthi Aditanar College of Education, Tiruchendur, Tamilnadu.

students' attitude towards mathematics. With the help of the technology, blended learning (b-learning) makes it easy for students to study and be able to change their attitude towards learning mathematics. So the investigator selected the topic **"B.Ed. Trainees' perception of Blended Learning in Teaching and Learning of Mathematics".**

OBJECTIVES

1. To find out the level of perception of blended learning in teaching and learning mathematics among the B.Ed. trainees.
2. To find out whether there is any significant difference in the mean scores of perception of blended learning among the B.Ed. trainees with respect to their gender and level of study.
3. To find out whether there is any significant difference in the mean scores of perception of blended learning among the B.Ed. trainees with respect to their fathers' educational qualification.
4. To find out whether there is association between perception of b-learning and father's educational qualification of B.Ed. Mathematics trainees.

METHOD

In the present study, the investigator has employed the **'survey method'.** In order to achieve the objectives of the study, the investigator used a self-prepared questionnaire which consists of 40 statements.

POPULATION AND SAMPLE OF THE STUDY

In this study, all the Mathematics trainees studying for B.Ed. at various colleges irrespective of the nature of management and other criteria but located in Virudhunagar District, Tamil Nadu were taken as the population for the study. 150 students were selected as sample using random sampling technique.

STATISTICAL TECHNIQUES USED

The following statistical techniques were used in the study: Arithmetic Mean , Standard Deviation, 't'- test, F-test and Chi-square.

HYPOTHESIS TESTING AND FINDINGS

Table 1

Level of perception towards b-learning of B.Ed. Mathematics trainees in total

Variable	Mean	SD	Low		Medium		High	
			No.	%	No.	%	No.	%
Perception towards Blended Learning	148.46	15.92	24	16	101	67.3	25	16.7

It is inferred from table 1 that 16% of B.Ed. Mathematics trainees have low level, 67.3 % have average level and 16.7% have high level of perception of b-learning. The mean of the perception of blended learning is 148.46 and standard deviation is 15.92. It is inferred that more number of B.Ed. Trainees have moderate level of perception of blended learning.

Table 2

Difference between the mean scores of Perception towards blended learning among the B.Ed. trainees with respect to Gender.

Dimensions	Category				't' value	Remarks at 5% level
	Male (N = 46)		Female (N = 104)			
	Mean	SD	Mean	SD		
e-learning Attitude	37.11	5.57	37.08	5.72	0.03	*NS*
t-learning Method	37.09	4.48	36.98	5.41	0.12	*NS*
Online Learning	37.65	4.95	36.80	5.78	0.87	*NS*
b-Learning Attitude	36.50	6.37	37.80	4.79	1.38	*NS*
Total	148.35	14.34	148.65	16.64	0.11	*NS*

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

From the above table it is inferred that there is no significant difference in perception of blended learning among the B.Ed., trainees with respect to their gender in terms of e-learning attitude, t-learning method, online learning and b-learning attitude.

Table 3

Difference between the mean scores of Perception towards blended learning among the B.Ed. trainees with respect to level of study

Dimensions	Category				't' value	Remarks 5% level
	UG (N = 118)		PG (N = 32)			
	Mean	SD	Mean	SD		
e-learning Attitude	37.61	5.59	35.16	5.54	2.20	S
t -learning Method	37.20	5.14	36.31	5.11	0.87	NS
Online Learning	37.44	5.41	35.66	5.87	1.63	NS
b-Learning Attitude	37.35	5.39	37.59	5.21	0.23	NS
Total	149.60	15.22	144.72	18.01	1.54	NS

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

From the above table it is inferred that there is significant difference in perception of blended learning among B.Ed. trainees with respect to their level of study in terms of e-learning attitude. But there is no significant difference in perception of blended learning among the B.Ed. trainees with respect to their level of study in terms of t-learning method, online learning and b-learning attitude.

Table 4

Analysis of Variance among the mean scores of perception towards blended learning in total and in different dimensions of B.Ed. trainees with respect to their fathers' educational qualification.

Dimension	Sources	Sum of Squares	df	Mean Square	F
Electronic learning	Between Groups	60.784	2	30.392	0.95
	Within Groups	4701.089	147	31.980	
Traditional learning	Between Groups	2.164	2	1.082	0.04
	Within Groups	3911.810	147	26.611	
Online learning	Between Groups	138.675	2	69.338	2.29
	Within Groups	4433.785	147	30.162	
Blended learning	Between Groups	101.324	2	50.662	1.79
	Within Groups	4142.676	147	28.181	
Total	Between Groups	92.158	2	46.079	0.18
	Within Groups	37666.802	147	256.237	

Degrees of freedom = 2, 147

Critical value at 0.05 level = 4.78

The above table shows that the computed 'F' values are lesser than the critical value 4.78 0.05 level and hence it is not significant. Consequently, the null hypothesis is to be accepted and can be said that there is no significant difference in perception of blended learning among the B.E trainees with respect to their father's educational qualification.

Table 5

Association between level of scores in perception towards b-learning and father's educational qualification of B.Ed. Mathematics trainees.

Father's Educational Qualification	Level of perception towards b-learning			
	Low	Medium	High	Total
Illiterate	6 (6)	25 (23)	4 (6)	35
School Level	16 (16)	63 (67)	20 (16)	99
College Level	2 (2)	13 (11)	1 (3)	16
Total	24	101	25	150
Chi-square value	3.26			

From the above table it is inferred that there is no association between level of scores in perception of b-learning and father's educational qualification of B.Ed. Mathematics trainees.

INTERPRETATIONS

According to the 't' test results

Gender

The 't' test result shows that, there is no significant difference in perception of blended learning among the B.Ed. trainees with respect to their gender in terms of e-learning attitude, t-learning method, online learning and b-learning attitude. This may be due to their curiosity to know the innovative and new things in their environment.

Level of study

The 't' test result shows that, there is significant difference in perception of blended learning among the B.Ed. trainees with respect to their level of study in terms e-learning attitude. But there is no significa difference in perception of blended learni among the B.Ed. trainees with respect to the level of study in terms of t-learning metho online learning and b-learning attitude. This m be due to the fact that B.Ed trainees are aware the current scenario in technological developme like e-learning, m-learning etc.

ANOVA

Father's educational qualification

There is no significant difference perception of blended learning among the B.E trainees with respect to their fathers' education qualification. And there is no significa difference in perception of blended learni among the B.Ed. trainees with respect to the fathers' occupation.

According to X^2 test results

Level of b-learning and Father's educational qualification

There is no association between perception of b-learning and father's educational qualification of B.Ed. Mathematics trainees.

EDUCATIONAL IMPLICATIONS

It is important to democratize educational opportunities by offering more flexible delivery options and providing more controls to students. However, there has been a lack of qualitative research studies as to how students perceive different learning approaches. The importance of this study is that it focused on students' voices regarding their experiences and perceptions of blended learning. Furthermore, the present study identified critical factors for the success of blended learning formats. Findings in this research provide useful insights to those who are interested in implementing blended learning and other types of learning formats.

Results obtained from the study involving the blended learning (b-learning) approach have shown that students demonstrate positive perceptions of learning. Therefore, with the help of technology, blended learning can be used as an alternative approach in teaching and learning mathematics in order to motivate students. It is recommended that the courseware to be made available online and to carry out further study on a larger scale to confirm the positive results.

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RIGHT TO INFORMATION ACT - AWARENESS AMONG STUDENTS AT TERTIARY LEVEL

* Dr. P. PAUL DEVANESAN
** Dr. A. SELVAN

ABSTRACT

Right to Information Act is needed for all groups of people / pupils to get needed information. The information obtained from private / government office may be utilized as an evidence in court in order to present the corrupt practice and injustice caused to any person in any office. The main purpose of this act is to regulate the activities of private / government offices so that the public will be benefited a lot. In the present study the main purpose is to find out the knowledge related to right to information needed for the students and to enhance the same. Normative survey method was used and the data was collected by simple random sampling technique in the present study. The reliability value was found to be 0.68. The data was analysed by percentage analysis and test of significance. The study revealed the following findings: Male students belonging to the rural area and studying in a Government colleges have a high level of awareness on right to information act. The science students whose parents have come under low and middle income groups have a high level of awareness on right to information. The study also suggests that awareness campaign may be conducted to enhance the knowledge on right to information.

INTRODUCTION:

The Right to Information Act has proven to be a landmark for good Government as it particularly helps the common people especially the poor and under privileged to get their due from the Government. According to the Act all citizens shall have the right to get information, provided it is subjected to the provisions of the Act. The Act has emerged as the most potent tool empowering ordinary citizens to combat state corruption and to play an important and active role in participatory democracy. It is actually drafted by civil society itself. The law is unique in the sense that it has been the result of years of struggle by civil society NGOS and media (Right to Information Act 2005). In this Act, there is provision for transfer of request by a public authority to another public authority wherein the subject matter/information is held.

The time limit has been prescribed for compliance with request for information under the Act is 30 days. At the same time, the time limit can also be extended to 40 days where third-party's interests are involved. The information provided is charged a fee at a reasonable rate. There is no fee for the person who are below poverty line. Further the information act is provided free of charge where the response time limit is not adhered to. If the right to information act is being refused to the applicant, the applicant

* Associate Professor, Dept of Education, Alagappa University, Karaikudi.
** Assistant Professor, Dept of Education, Alagappa University, Karaikudi.

can appeal to the prescribed authority. The time limit for decision-making is 30 days. It may also be extendable to 45 days.

The Monitoring and Reporting Act of Information Act makes a provision to produce statistics to assess its implementation so that there will be an effective improvement. The implementation of Information Act must be monitored by central information commission and state information commission and they should prepare an annual report and the report must be placed before parliament and state legislature so that the functions of state and central Government will be known to the members of the state assembly / parliament. The main purpose of implementing this act is to regulate the activities of the Government as well as private sectors.

Even though the Right to Information Act is implemented, most of the officers continue to commit corrupt practices. Unless and until the public and students have awareness of this Act, it is not possible to profit the same. Therefore the investigator made an attempt to identify the level of awareness among college students about the Right to Information Act.

OBJECTIVES OF THE STUDY

1. To identify the various aspects of knowledge related to Right to Information Act needed for students studying at college level.
2. To identify the level of awareness of college students on Right to Information Act.
3. To identify the significant differences, if any, between different groups of biographical variables such as Sex, Communal groups, Students' Residential place, Location of College, Type of college, and Nature of Department, regarding awareness of Right to Information Act.
4. To suggest some measures / activities to enhance the awareness level of college students on Right to Information Act.

METHOD

Normative Survey Method was employed for the present research study.

SAMPLING TECHNIQUE

The investigator used the technique of Simple Random Sampling to collect responses from the college students.

STATISTICAL TECNIQUES

The investigator used percentage analysis to identify the level of awareness on Right to Information Act and the 't' test was used to identify the differences between different groups on biographical variables.

SAMPLE

The sample consists of 220 undergraduate students studying in Arts and Science colleges in Namakkal District.

TOOL

The Investigator used a self made questionnaire.

PERCENTAGE ANALYSIS

TABLE 1 : Distribution of Percentage Scores of College Students in their Awareness on Right Information Act.

S.No.	Categories		Percentage
1	Overall Categories		53.6%
2	Sex	Male	53.33%
		Female	48.72%
3	Community	Forward Caste	40.86%
		Backward / Most Backward Caste	51.83%
		Scheduled Caste / Tribe	58.65%
4	Students' residential place	Rural	53.36%
		Urban	49.83%
5	Location of College	Rural	56.87%
		Urban	49.23%
6	Type of College	Govt. College	61.44%
		Private College	42.63%
7	Parental Educational	Illiterate	56.27%
	Qualification	Primary	55.30%
		Secondary	53.45%
		Higher Secondary	45.30%
		Collegiate Education	44.57%
8	Parental Annual Income	Low Income Group	57.84%
		Middle Income Group	57.21%
		High Income Group	41.99%

FINDINGS

The college students' awareness level on right to information is above average. Students from the goverment colleges and male students in rural areas have high level of awareness on Right to Information Act. The SC, ST and BC groups in communal category, students whose parents are illiterate and students belonging to low income group and middle-income group have a high level of awareness on Right to Information Act.

DIFFERENTIAL ANALYSIS

TABLE 2 Significance of difference between Mean Scores of College Students in their Awareness on Right to Information Act.

S. No.	Categories		M	SD	N	't' Value	Level of Significance
1	Male Vs Female		17.77 15.10	4.67 4.68	124 96	4.31	1% level
2	Communal Categories	SC *vs* BC	18.18 16.16	4.19 4.97	66 148	3.22	1% level
		SC *vs* FC	18.18 12.66	4.19 2.49	66 6	4.84	1% level
		BC *vs* FC	16.16 12.66	4.97 2.49	148 6	3.9	1% level
3	Rural Place *vs* Urban Place		16.85 15.44	4.76 5.12	18 38	1.1	Not Significant
4	Rural College *vs* Urban College		17.63 15.26	4.59 4.71	125 95	3.34	1% level
5	Government *vs* Private		19.4 13.21	4.37 3.17	128 92	11.47	1% level
6	Science *vs* Arts		17.16 16.17	5.20 4.46	96 124	1.49	Not Significant

From the above table it can be concluded that there is significant difference between male and female students from different communities, students of government and private colleges and students in rural and urban colleges in their awareness on Right to Information Act.

CONCLUSION

The present study on awareness of college students on Right to Information Act concluded that rural students have high awareness on right to information. Particularly female students belonging to forward community have low level of awareness on right to information. Students residing in urban area and studying in private colleges have low level of awareness. Arts group students, students whose parental education levels are higher secondary and collegiate education, and students of high income group have low level of awareness on right to information. Therefore teachers and administrative officials must conduct awareness programmes on Right to Information Act so that the students get enough knowledge to enhance their level of awareness.

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N.V.K.S.D College of Education, Attoor.
nvksdcollege@rediffmail.com

SPIRITUAL INTELLIGENCE AND FRUSTRATION TOLERANCE OF COLLEGE STUDENTS

* Dr. ASHA J.V
** DEVIKA . S

ABSTRACT

The main objective of the study is to find out the significant relationship between spiritual intelligence and frustration tolerance of college students. The survey method was adopted in this study. The sample consists of 400 students randomly selected from different Arts and Science Colleges of Kanyakumari District. Spiritual intelligence test developed by Devika .S and Asha J.V (2010) and Frustration Tolerance scale developed by J. Sunanda and R.Mukundan (1998) were used for collecting data.' t ' test, ANOVA and Pearson product moment correlation are used for analyzing the data. The major finding is that there exists a significant relationship between Spiritual Intelligence of the college students and their Frustration Tolerance.

INTRODUCTION

Education is an activity which develops the personality of an individual. Education is, therefore, a process that makes a complete individual in all respects. If students are to do well in life,they would require not only mere academic knowledge and intelligence but also the intelligence from within especially Spiritual Intelligence to perform the task with excellence.

Spiritual Intelligence is the Soul's intelligence. It is the intelligence of the deep self. It is the ability to act with wisdom and compassion by maintaining mental peace regardless of the circumstances.

Frustration Tolerance is the degree and duration of stress that an individual can tolerate without undergoing serious personality decompositions.

SIGNIFICANCE OF THE STUDY

A nation is built in its educational institutions. Education has a responsibility to equip the youth with the real knowledge and intelligence by specifically emphasizing spiritual intelligence that comes from within, which will build up their character to enter the world of good and great men.

Our youth is becoming drug addicted, sleazy and murderous. It has been seen that some of our young men, even in the state of milder and acute frustrations get easily stressed and tensed up and often behave in an abnormal way. The reason behind this is the lack of value-based and spiritually oriented education. To remove these ugly blots from the picture, what we need today

* Assistant Professor in Education, Department of Education, University of Kerala.
** Assistant Professor in Education, N.V.K.S.D. College of Education, Attoor.

is the education for the whole personality of the man- physical, mental, intellectual and specially spiritual for generating stress-free future generations who can solve the mysteries of life enthusiastically and successfully.

When a person gets frustrated, it will affect his performance in many areas. So there is a strong need to relate the education with the sensible aspect of life by equipping our youth with the power to alleviate tensions where by they can be skilfully made responsible for their behaviour or actions. Spiritual intelligence is one of the important factors that will help to reduce tension. So it is high time that educators took conscious steps to nurture the spiritual intelligence of learners for enhancing a sense of well-being. With this information of the immense value of spiritual intelligence, the investigator decided to conduct a study to find out the relationship between spiritual intelligence and frustration tolerance.

OBJECTIVES

(1) To compare the spiritual intelligence of college students with respect to their (i)Gender (ii)Locale (iii)Religion.

(2) To compare the frustration tolerance of students with respect to their (i)Gender (ii)Locale (iii)Religion.

(3) To find out the relationship between spiritual intelligence and frustration tolerance of college students.

METHODOLOGY

Normative survey method was used for the present study.

SAMPLE

The sample consists of 400 students from different Arts and Science Colleges in Kanyakumari District.

TOOLS USED

Spiritual Intelligence test developed by Devika.S. and Asha J.V. (2010) and Frustration Tolerance scale prepared by J Sunanda and R.Mukundan (1998) were used for the study.

STATISTICAL TECHNIQUES USED

The mean, standard deviation, t-test, ANOVA and Pearson's product moment correleation were used for analyzing the data.

Table 1

Difference between male and female college students in their spiritual intelligence.

Gender	N	Mean	SD	Calculated t -value	Remark
Male	200	17.25	3.61	8.96	S
Female	200	20.60	3.95		

(At 1% level of significance, the table value of 't' is 2.56)

is inferred from the above table that there is significant difference between male and female in ir spiritual intelligence.

Table 2

Difference between urban and rural students in their spiritual intelligence.

Locality	N	Mean	SD	Calculate 't' value	Remark
Urban	160	18.83	4.30	0.49	NS
Rural	240	19.03	4.07	0.49	NS

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

It is inferred from the above table that there is no significant difference between urban and rural students in their spiritual intelligence.

Table 3

'F' value among Hindu, Muslim, and Christian students in their spiritual intelligence.

Religion	Source	Sum of Squares	Degrees of freedom	Mean square variance	Calculated 'F' value	Remark
Hindu	between	1242.791	2	621.395	43.446	S
Muslim						
Christian	with in	5678.209	397	14.303		

(The calculated 'F' value is statistically significant at 0.05 level)

It is inferred from the above table that there exists significant difference among Hindu,Muslim and Christian college students in their spiritual intelligence.

Table 4

Difference between male and female college students in their frustration tolerance.

Gender	N	Mean	SD	Calculated 't' value	Remark
Male	200	67.48	11.82	8.73	S
Female	200	78.20	12.70		

(At 1% level of significance, the table value of 't' is 2.56)

It is inferred from the above table that there is significant difference between male and female students in their frustration tolerance.

Table 5

Difference between urban and rural students in there frustration tolerance.

Locality	N	Mean	SD	Calculated 't' value	Remark
Urban	160	71.91	13.41	1.13	NS
Rural	240	73.45	13.35		

(At 5% level of siginificance, the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between urban and rural students in their frustration tolerance.

Table 6

'F' value among Hindu,Muslim and Christian students in their frustration tolerance.

Religion	Source	Sum of squares	Degrees of freedom	Mean square variance	Calculated 'F' value	Remark
Hindu	between	8820.490	2	4410.24	27.965	S
Muslim						
Christian	within	62608.62	397	157.704		

(The calculated 'F' value is statistically significant at 0.05 level)

It is inferred from the above table that there is significant difference among Hindu,Muslim and Christian college students in their frustration tolerance.

Table 7

Correlation between spiritual intelligence of the college students and their frustration tolerance.

Sample	Total number	Correlation co-efficient	Level of significance
Total	400	0.728	0.01

It is inferred from the above table that Spiritual intelligence and frustration tolerance are highly and positively correlated.

CONCLUSION

From the study, it is concluded that there exists a significant relationship between Spiritual Intelligence and Frustration Tolerance among college students. As it is the case, the need of the hour is to recognize the value of spiritual intelligence for stress and frustration –free life. It strengthens our youth to be mentally prepared for facing the problems of life boldly by not being an unfortunate victim of frustration.

For enabling our students to have better adjustment in life by tolerating frustrations, the concept of spiritual intelligence can be included in their academic curriculum. Moreover the teachers and the parents must encourage the students to practice yoga, meditation, spiritual practice, social services etc. which would help our future citizens to maintain a frustration- free balanced life with friends,family,teachers and society.

So it is high time that we realized the importance of spiritual intelligence in preserving and maintaining a healthy,successful and robust frustration-free life.

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Frontiers in Education and Research
nvksdcollege@rediffmail.com
N.V.K.S.D. College of Education, Amathur

RELATIONSHIP BETWEEN COGNITIVE STYLE AND ACADEMIC ACHIEVEMENT OF OUTGOING UNDERGRADUATE HISTORY STUDENTS

* Dr.M.Antony Raj
** Dr. A. Amal Raj

ABSTRACT

The present study was intended to examine the relationship between cognitive style and academic achievement of outgoing undergraduate History students. The sample consists of 760 final year undergraduate History students in Tirunelveli, Tuticorin and Kanyakumari districts and random sampling technique was adopted. Cognitive style inventory was used for data collection. Data were analysed using t-test and Correlation. The study has revealed that there is no significant difference among outgoing undergraduate History students from the three districts in their systematic, intuitive, integrated and undifferentiated style but there is significant difference among them in their split cognitive style.

It is also found that there is no significant relationship between systematic, intuitive, integrated and undifferentiated cognitive styles and academic achievement of outgoing undergraduate History students but significant relationship was noted between split style and academic achievemnet.

INTRODUCTION

Cognitive style refers to information processing habits such as perceiving, thinking, remembering and problem solving (Goldstein, K.M.1978). Cognitive style is a hypothetical construct that has been developed to explain the process of perceiving, remembering, judging, appraising and problem solving. More or less it includes one's intellectual activities. It is inborn and affects a wide range of individual functioning. In education, cognitive style refers to how the students acquire knowledge (cognition) and how they process information (conceptualization) and how it is applied by them in problem solving. A person's cognitive style can be identified by his responding to information or situations or problem solving. Sometimes, it may make or break the relationship with others, the environment and even individual functioning in total. The real challenge of a researcher is to identify the reasons which underlie these differences in cognitive style. This research attempts to find out the reasons for the differences in the cognitive styles because such differences in cognitive style greatly affect the way people are, the manner in which they behave and general attainment or achievement in learning situations.

* Assistant Professor in History, St.Xavier's College of Education, Palayamkottai.
** Principal, Sri Sarada College of Education, Ariyakulam, Tirunelveli.

SIGNIFICANCE OF THE STUDY

Education is a felt necessity of man from the primitive simple life to the present highly complex civilization. The development of any individual or community depends on its educational attainment. There are many history students in colleges whose academic achievement seems to be falling below their mental ability. There are many others whose achievement is higher than their mental ability. So there must exist certain cognitive and non-cognitive factors which influence the academic achievement of history students in arts and science colleges. It is because of the individual differences in their cognitive styles.

Cognitive style is a term used in cognitive psychology to describe the way students think, perceive and remember information or their preferred approach in using such information to solve problems. If a student has a similar cognitive style to his/her teacher, the chances that the student will have a more positive learning experience is said to be improved. Likewise, peers or the class mates with similar cognitive style will probably feel more positive about their interaction with their peers. The matching of cognitive style may make students feel more comfortable when studying and interacting with one another. This may even guarantee the success of the outcome or academic achievement. Therefore, it is theoretically reasonable to take the individual differences in cognitive style of the outgoing undergraduate history students for this study.

OBJECTIVES OF THE STUDY

The following are the objectives of the present study

1. To find out the cognitive style of outgoing undergraduate history students in terms of select background variables.
2. To find out the level of academic achievement of outgoing undergraduate history students in terms of select background variables.
3. To find out the relationship, if any, between cognitive style and academic achievement of outgoing undergraduate history students.

METHOD USED

Survey method was adopted by the investigator to study the cognitive style of the outgoing undergraduate history students.

SAMPLE

The sample consisted of 760 final year undergraduate history students in arts and science colleges in Tirunelveli, Thoothukudi and Kanyakumari districts affiliated to Manonmaniam Sundaranar University, Tirunelveli. The investigator used simple random sampling technique for selecting the sample from the population.

TOOLS USED FOR THE PRESENT STUDY

By keeping the various objectives of the present study, the investigator used the following tools for data collection.

1. Cognitive style inventory developed and validated by Dr.Praveen Kumar Jha(2001)
2. The results of fifth semester examination published by Manonmaniam Sundaranar University, Tirunelveli as the source of students' academic achievement

STATISTICAL TECHNIQUES USED

Depending upon the nature of the hypothesis of the study, the investigator used mean, standard deviation, t-test and correlation as the statistical techniques for analyzing and interpreting the data.

RESULTS

Table: 1

COGNITIVE STYLE OF THE OUTGOING UNDERGRADUATE HISTORY STUDENTS

Cognitive Style	Count	Percentage
Systematic style	35	4.60
Intuitive style	36	4.74
Integrated style	245	32.23
Undifferentiated style	57	7.5
split style	387	50.93
Total	760	100

It is inferred from the above table that among the outgoing undergraduate history students 4.60% have systematic style, 4.74% have intuitive style, 32.23% have integrated style, 7.5% high undifferentiated style and 50.93% have split style.

Table 2

DIFFERENCE IN THE COGNITIVE STYLE OF THE OUTGOING UNDERGRADUATE HISTORY STUDENTS OF DIFFERENT DISTRICTS

Cognitive Style	Categories	Source of variation	Sum of squares	Mean square	df	Calculated F value	Table value	Remarks at 5% level
Systematic style	Tirunelveli Thoothukudi Kanyakumari	Between	194.240	97.120	2, 32	0.895	3.26	NS
		Within	194.240	97.120				
Intuitive style	Tirunelveli Thoothukudi Kanyakumari	Between	356.889	178.444	2, 33	1.381	3.26	NS
		Within	4262.667	129.172				
Integrated style	Tirunelveli Thoothukudi Kanyakumari	Between	662.397	331.199	2, 242	2.372	3.03	NS
		Within	33794.729	139.648				
Undifferentiated style	Tirunelveli Thoothukudi Kanyakumari	Between	744.734	372.367	2, 54	1.236	3.15	NS
		Within	16274.985	301.389				
Split style	Tirunelveli Thoothukudi Kanyakumari	Between	515.667	257.833	2, 384	3.742	3.02	S
		Within	26458.199	68.902				

It is inferred from the above table that there is no significant difference among outgoing undergraduate history students from Tirunelveli, Thoothukudi and Kanyakumari districts in their systematic, intuitive, integrated and undifferentiated cognitive styles. But there is significant difference among them in their split cognitive style.

Table 3

DIFFERENCE IN THE COGNITIVE STYLES OF THE OUTGOING UNDERGRADUATE HISTORY STUDENTS IN TERMS OF GENDER

Cognitive Style	Categories	count	Mean	S.D	Calculated 't' value	Table value	Remarks at 5% level
Systematic style	Male	8	134.88	9.219	0.444	2.03	NS
	Female	27	136.59	10.835			
Intuitive style	Male	7	131.43	15.437	1.483	2.02	NS
	Female	29	138.48	10.193			
Integrated style	Male	70	185.51	11.974	4.120	1.97	S
	Female	175	178.81	11.324			
Undifferentiated style	Male	29	100.69	16.697	0.478	2.00	NS
	Female	28	98.46	18.402			
Split style	Male	103	140.27	8.503	0.255	1.97	NS
	Female	284	140.52	8.321			

It is inferred from the above table that there is no significant difference between male and female outgoing undergraduate history students in their systematic, intuitive, split, and undifferentiated cognitive styles. But there is significant difference between them in their integrated style.

Table 4

DIFFERENCE IN THE ACADEMIC ACHIEVEMENT OF OUTGOING UNDERGRADUATE HISTORY STUDENTS IN TERMS OF GENDER

Categories	Count	Mean	S.D	Calculated 't' value	Remarks
Male	217	58.01	9.36	2.96	S
Female	543	60.15	8.06		

(At 5% level of significance, the table value of 't' is1.96)

It is inferred from the above table that there is significant difference between male and female outgoing undergraduate history students in their academic achievement.

Table 5

DIFFERENCE IN ACADEMIC ACHIEVEMENT OF OUTGOING UNDERGRADUATE HISTORY STUDENTS OF DIFFERENT DISTRICTS

Categories	Source of variation	Sum of squares	Mean square variance	Calculated 'F' value	Remarks
Tirunelveli	Between	2441.259	1220.630	17.67	S
Thoothukudi	Within	52485.781	69.334		
Kanyakumari					

(At 5% level of significance, the table value of 'F' for df (2,757) is 3.00

It is inferred from the above table that there is significant difference among outgoing undergraduate history students in Tirunelveli, Thoothukudi and Kanyakumari districts in their academic achievement.

Table: 6

RELATIONSHIP BETWEEN COGNITIVE STYLE AND ACADEMIC ACHIEVEMENT

Cognitive Style	count	df	r value	Table Value	Remarks at 5% level
Systematic style	35	33	0.088	0.468	NS
Intuitive style	36	34	0.143	0.553	NS
Integrated style	245	243	0.080	0.088	NS
Undifferentiated style	57	55	0.026	0.196	NS
Split style	387	385	0.092	0.088	S

There is no significant relationship between systematic, intuitive, integrated and undifferentiated cognitive styles and academic achievement of outgoing undergraduate history students. But there is significant relationship between split style and academic achievement.

FINDINGS

1. The majority of the outgoing undergraduate history students have split style irrespective of their district and gender.
2. Outgoing undergraduate history students of Kanyakumari district are better than the students of Tirunelveli, and Thoothukudi districts in their split style.
3. Male outgoing undergraduate history students are better than female students in their integrated style.
4. Students of Kanyakumari district showed high or academic achievement than the students of Tirunelveli and Thoothukudi districts.
5. Female outgoing undergraduate history students are better than male students in their academic achievement.
6. There is significant relationship between split style and academic achievement.

CONCLUSION

The subject history offers opportunity for either mode of learning that is global and analytical learning of the past. The professors also encourage the students in their process of thinking, analyzing and problem solving. So majority of the outgoing undergraduate history students have split style irrespective of their district and gender and also it may be the reason for the relationship between split style and academic achievement. Male students are able to change their cognitive styles quickly and easily and their proactive approaches to problem solving are the reasons for their integrated style. The study reveals that outgoing undergraduate history students from Kanyakumari district are better than their counterparts in their split cognitive style and academic achievement. The literacy rate of Kanyakumari district is very high. The educated people help their children to think and act properly according to the need of the situation. The college administration also provides ample opportunities with modern technologies and other learning resources like library and laboratory.

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N V K S D College of Education, Attoor
nvksdcollege@rediffmail.com

COMPONENTS OF MULTIPLE INTELLIGENCE AND SELF-ESTEEM: AN ANALYT ICAL STUDY AMONG HIGH SCHOOL STUDENTS

* Sreelatha R
** Dr. B. Krishna Prasad

ABSTRACT

The present study was intended to examine the relationship among the component variables of Multiple Intelligence with Self-Esteem in high school students. The sample included 300 high school students selected by Stratified sampling technique. Multiple Intelligence Inventory and Self-Esteem Inventory were used for data collection. The data were analyzed using t test and Pearson's product moment correlation (r) The study has revealed that there exists significant difference between male and female students in verbal linguistic intelligence, logical-mathematical intelligence, visual-spatial intelligence, musical intelligence, and interpersonal intelligence. There is no significant difference between urban and rural school students for the component variables of multiple intelligence. No significant difference is noted in the self-esteem with regard to the background variables, gender and locality. It is also found that there exists significant correlation between components of multiple intelligence namely verbal - linguistic, logical-mathematical, visual-spatial, bodily-kinesthetic, intrapersonal, interpersonal, naturalistic intelligence and self- esteem of high school students.

INTRODUCTION

Gardner (1983) proposed a pluralistic theory called the theory of Multiple Intelligence. According to him, intelligence comprises multiple independent constructs which are not just a single unitary construct. Instead of speaking of multiple abilities which together constitute intelligence like the theories put forth by Thurston (1924), Guilford (1960), and so on, this theory distinguishes eight clear cut intelligences which are relatively orthogonal of each other. Each is a separate system of functioning, though these systems can interact to produce intelligent performance.

In the present educational system, the school programme is no longer confined to classrooms and textbooks only. The subject matter is connected with real life activities of students and with the activities of the community. The need to point out the priority areas of educational system makes it necessary, the identification of the factors contributing mostly to the educational achievement of student learning.

* Research Scholar,St. Xavier's College of Education (Autonomous), Palayamkottai.
** Former Principal, N V K S D College of Education, Attoor.

The scholastic achievement of the learners is the outcome of the combined efforts of the teachers, students, parents and the school management. The academic achievement is found to be greatly influenced by the type and level of intelligence of the students, the quality of teachers in terms of their training and experience as teachers, socio economic facilities of the family and school environment as a whole.

NEED AND SIGNIFICANCE OF THE STUDY

Multiple Intelligence will have a positive impact on the comprehensive and collaborative achievement of the students. Students will realize various learning methods or procedures from their respective teachers. In modern days, multiple intelligences identified in the children's initial stages could be made to categorize themselves, and be given proper training in developing good skills and abilities.

Even if the aim of education is only to cultivate intellect, emotions linked to the learner's attitude toward himself must receive primary attention. The intellectual possibilities are bounded by one's emotions. One's mind is not free if his/her emotions are fettered. In recent years there has been mounting evidence to show that many of those who have reading difficulties and many underachievers who are not performing up to capacity have emotional difficulties. The interplay between emotional and intellectual factors is quite evident with these. But the role of emotions is also seen in those who are successful and even among brilliant students.

The students are put into a lot of emotional stress during the adolescent stage and much has been talked about the workload given in schools, which may affect the Self-Esteem of students. Many studies show that more and more of students are being overcome by 'Zero Syndrome' or 'I am a useless being' feeling, which is not healthy either from the psychological point of view or individual's point of view. Therefore a very healthy environment is needed for the students to inculcate a positive Self-Esteem and thereby academic progress can be enhanced.

With regard to Self-Esteem, it may be noted that the term generally refers to how one feels about or how one values oneself, depending on the degree of liking or disliking within him/her. When we feel good within, our performance goes up, relationship improves in home, school or at work. As such there is a direct correlation between self-esteem and behaviour related to intellectual functioning. All great leaders and teachers throughout history have concluded that one must be internally driven in order to be a successful person. Parents and teachers focus always on the academic performance through nurturing different types of intelligence and they pay little or no attention to factors like multiple intelligence and self-esteem. It is also a fact that self-esteem is a major component of success or failure and according to psychologists, management experts and educationists, high Self-Esteem can promote a gratifying and successful life.

However important factors like Self-Esteem and its relationship with components of multiple intelligence has not been investigated by researchers and therefore the present investigation focusses on the components of Multiple Intelligence and Self-Esteem among high school students.

OBJECTIVES

1. To find whether there is any significant difference among the components of Multiple Intelligence in high school students with regard to gender, and locale of school.

2. To find whether there is any significant difference in Self-Esteem of high school students with regard to gender, and locale of school.
3. To find out the extent of inter-relationships among eight types of intelligences categorised under Multiple Intelligence and Self-Esteem among high school students.

PLAN AND PROCEDURE

The Normative survey method was used for the present study.

a) SAMPLE

The sample of the study consisted of 300 high school students selected from kanyakumari district by stratified sampling technique.

b) TOOLS

The tools used were:

- Multiple Intelligence Inventory constructed and validated by Sreeletha, Amal Raj, and Krishna Prasad (2008).
- Self-Esteem Inventory developed by Indira and Sam Sananda Raj (2009).
- Personal Data Sheet.

STATISTICAL TECHNIQUES

The following statistical techniques were used for analysing the data

1. t-test
2. Pearson's product moment correlation (r)

ANALYSIS AND INTERPRETATION

Table 1

Comparison of male and female students in eight types of intelligences categorised under Multiple Intelligence

Sl. No.	Categories of Multiple Intelligence	Groups Compared	N	Mean	SD	t	Level of Significance
	Verbal Linguistic intelligence	Male	72	79.83	10.73	3.50	0.01
		Female	228	74.47	13.07		
	Logical-Mathematical intelligence	Male	72	70.75	7.32	4.58	0.01
		Female	228	76.05	11.66		
	Visual-Spatial intelligence	Male	72	68.75	15.00	3.88	0.01
		Female	228	76.16	10.86		
	Bodily-kinesthetic intelligence	Male	72	78.00	15.81	1.00	NS
		Female	228	75.95	12.97		
	Musical intelligence	Male	72	83.67	7.92	5.21	0.01
		Female	228	77.00	13.21		
	Intrapersonal intelligence	Male	72	78.17	17.78	1.67	NS
		Female	228	74.37	13.59		
	Interpersonal intelligence	Male	72	69.17	12.98	4.00	0.01
		Female	228	76.24	13.31		
	Naturalistic intelligence	Male	72	67.83	12.74	0.38	NS
		Female	228	67.16	14.68		

The result presented in table 1 revealed that among the eight components of Multiple Intelligence, the calculated t values of five components namely Verbal-Linguistic Intelligence (t=3.50), Logical-Mathematical Intelligence (t=4.58), Visual-Spatial Intelligence(t=3.88), Musical Intelligence (t=5.21), and Interpersonal intelligences (t=4.00) are significant at 0.01 level and for the remaining three components namely Bodily-Kinesthetic intelligence (t=1.00), Intrapersonal intelligence (t=1.67), and Naturalistic intelligence (t=0.38) are not significant at any level. Therefore the null hypothesis that, "There is no significant difference among the components of Multiple Intelligence in high school students with regard to gender" is rejected for the components Verbal-Linguistic Intelligence, Logical-Mathematical Intelligence, Visual-Spatial Intelligence, Musical Intelligence, and Interpersonal intelligences and accepted for the components Bodily-Kinesthetic intelligence, Intrapersonal intelligence, and Naturalistic intelligence.

Table 2

Comparison of rural and urban school students in eight types of intelligences categorized under Multiple Intelligence

Sl. No.	Categories of Multiple Intelligence	Groups Compared	N	Mean	SD	t	Level of Significance
	Verbal Linguistic intelligence	Rural	48	75.85	13.08	0.05	NS
		Urban	252	75.74	12.70		
	Logical-Mathematical intelligence	Rural	48	74.79	11.30	0.01	NS
		Urban	252	74.78	10.98		
	Visual-Spatial intelligence	Rural	48	75.15	12.02	0.48	NS
		Urban	252	74.23	12.45		
	Bodily-Kinesthetic intelligence	Rural	48	76.65	13.83	0.11	NS
		Urban	252	76.40	13.70		
	Musical intelligence	Rural	48	78.44	12.63	0.10	NS
		Urban	252	78.63	12.47		
	Intra-personal intelligence	Rural	48	75.13	14.72	0.08	NS
		Urban	252	75.31	14.80		
	Interpersonal intelligence	Rural	48	74.67	23.90	0.07	NS
		Urban	252	74.52	23.52		
	Naturalistic intelligence	Rural	48	67.31	14.51	0.00	NS
		Urban	252	67.32	14.20		

Since the calculated t value is not significant at any level, the null hypothesis that, "There is no significant difference between rural and urban school students among the eight components of Multiple Intelligence" is accepted.

Table: 3

Comparison of male and female students in Self-Esteem

Groups Compared	N	Mean	SD	t	Level of Significance
Male Students	72	14.83	2.13	1.43	NS
Female Students	228	15.24	1.97		

Since the calculated t value is not significant at any level, the null hypothesis that, "There is no significant difference between male and female students in Self-Esteem" is accepted.

Table 4

Comparison of rural and urban school students in Self-Esteem

Groups Compared	N	Mean	SD	t	Level of Significance
Rural School Students	48	15.17	2.07	0.10	NS
Urban School Students	252	15.13	2.01		

Since the calculated t value is not significant at any level, the null hypothesis that, "There is no significant difference between rural and urban school students in Self-Esteem" is accepted.

Table 5

Correlation between the component variables of Multiple Intelligence and Self-Esteem

	Variables correlated	N	r	Level of Significance	verbal interpretation of r
1	Verbal-Linguistic intelligence and Self-esteem	300	0.159	0.01	Negligible Correlation
2	Logical-Mathematical intelligence and Self-esteem	300	0.140	0.05	Negligible Correlation
3	Visual-Spatial intelligence and Self-esteem	300	0.228	0.01	Low Correlation
4	Bodily-Kinesthetic intelligence and Self-esteem	300	0.287	0.01	Low Correlation
5	Musical intelligence and Self-esteem	300	-0.056	NS	Negligible Correlation
6	Intrapersonal intelligence and Self-esteem	300	0.054	NS	Negligible Correlation
7	Interpersonal intelligence and Self-esteem	300	0.341	0.01	Low Correlation
8	Naturalistic intelligence and Self-esteem	300	0.520	0.01	Marked or Substantial Correlation

MAJOR FINDINGS

1. Significant difference is noted between male and female students in their Verbal-Linguistic Intelligence (t=3.50), Logical-Mathematical Intelligence (t=4.58), Visual-Spatial Intelligence (t=3.88), Musical intelligence (t=5.21), and Interpersonal intelligences (t=4.00).
2. No significant difference is noted between male and female students in their Bodily-Kinesthetic, Interpersonal intelligence, and Naturalistic intelligence.
3. No significant difference is noted between rural and urban school students in any of the components of Multiple Intelligence.
4. No significant difference is noted between male and female students in their Self-Esteem.
5. No significant difference is noted between rural and urban school students in their Self-Esteem.
6. There exist a significant (at 0.01 level) and marked correlation between Naturalistic intelligence and Self-Esteem. A significant but low correlation exists between Self-Esteem and Interpersonal intelligence, Bodily-Kinesthetic intelligence, and Visual-Spatial intelligence. Significant and negligible correlation is noted between Self-Esteem and Verbal-Linguistic intelligence, and Logical-Mathematical intelligence. However there is no significant correlation between Self-Esteem and Musical intelligence. Self-Esteem also showed no significant relationship with Intrapersonal intelligence.

DISCUSSION AND CONCLUSION

From the differential analysis it is inferred that male and female high school students did not differ significantly in the components of Multiple Intelligence except in Visual-Spatial, Musical, Interpersonal, Verbal-Linguistic, and Logical-Mathematical intelligence. This may be due to the availability of exposure on technology, refreshments; social relationships, communication etc.

With regard to locale of school, high school students did not differ significantly among the components of Multiple Intelligence. This is probably due to the fact that nowadays both rural and urban school students have more or less the same facilities at home and school.

In Self-Esteem, no significant difference is noted in both gender, and locale of school. This may be due to the reason that Self-Esteem is a factor related to the self. Without Self-Esteem, one could not be a successful person in ones life. Self-Esteem seems to have a positive influence upon various aspects in life.

It may be concluded that Multiple Intelligence and Self-Esteem exist in all students irrespective of locale of school. Gender has influence upon the components of Multiple Intelligence and has no influence upon Self-Esteem. Findings of the study also have revealed that all the components of Multiple Intelligence have significant correlation with Self-Esteem except Musical intelligence and Intrapersonal intelligence.

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NOTES TO CONTRIBUTERS

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Editorial

Inclusive Excellence in Higher Education

Higher education in India is passing through a phase of unprecedented expression, marked by an explosion in the volume of students, number of institutions and a quantum jump in the level of public funding. The enormity of the challenge of providing equal opportunities for quality higher education to ever growing number of students is also a historic opportunity for correcting sectorial and social imbalances, reinvigorating institutions, crossing international bench marks of excellence and extending the frontiers of knowledge.

At the heart of an institution is the responsibility to provide its students with a well propounded education, an education that fosters their intellectual, personal and social growth. For students preparing to embark upon work and life in the 21st century, a critical element of a well rounded education is the ability to understand and to function effectively in a diverse and increasingly interdependent global context. Inclusive excellence asks us to actively manage diversity as a vital and necessary asset of the institution rather than as an external problem. Inclusive excellence makes shift in our thinking from diversity as a goal in itself to diversity as part of the educational process, a real world factor that helps everyone learn better when it is engaged deliberately.

CONTENTS

Through making excellence inclusive the aim is to (a) establish diversity and inclusion as hallmarks of academic excellence and institutional effectiveness, (b) operationalize diversity and inclusion in all spheres of campus functioning, (c) ensure academic freedom and corollary responsibilities are understood and practiced by students and faculty alike and (d) create a reinvigorated 21st century educational process that has diversity and inclusion at the centre, through which all students advance in cognitive, affective and interpersonal sophistication outcomes that are vital in the workforce and in society. Inclusive excellence re-envision both quality and diversity. It reflects a striving for excellence in higher education that has been made more inclusive by decades of work to infuse diversity into recruiting admissions and living, into the curriculum and co-curriculum and into administrative structures and practices. It also embraces newer forms of excellence, and expands ways to measure excellence, that take into account research on learning and brain functioning, the assessment movement, and more nuanced accountability structures. In the same way, diversity and inclusion efforts move beyond number of students or number of programs as end goals. Instead they are multilayer excellence in learning: research and teaching, student development: institutional functioning through local and global community engagement: workforce development; and more.

Inclusive excellence is not a free - standing initiative to be treated as separate or distinct from institutional planning efforts. Its implementation should not require any additional resources of either the financial or human kind. It will require the leveraging of institutional resources so that they are distributed according to a campus's most pressing diversity needs. By 2015, it will be evident that inclusive excellence is a core value of the institution. We envision a community that goes beyond tolerance of difference to become one that is guided by the principles of equity, social justice, cultural competence and engaged citizenship.

Editor

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A ROOM TO GROW

*Dr.S.Sreedevi

It was a summer day in Houston, USA. My daughter invited me to visit her daughter's nursery class. We entered a single storied building wherein the light reflected from the long French window. Passing through the main entrance we found ourselves in a charming quadrangle well decorated with flowers. In the centre a fountain played softly into a basin carved with animals which children love to see.

We saw the nursery end with its large airy classrooms, toilets, cloakrooms with an opening to its play ground with sand pit, see saws, jungle, gym and balancing bars and safe swings. At the other end I found a medical block with the doctor's room and a waiting room. The rest of the building was occupied by classrooms, painted in pretty colours, with pretty pictures, low cupboards, encouraging children to keep and look after their own properties. The dustless shining surface of tables and chairs bearing witness to the pride taken by those kids to be clean.

But where are the kids? I asked myself. Stepping out of the classrooms I found them. They were all happy running and jumping and talking to friends - they were enjoying themselves. Sounds of mirth attracted me to a pool where a crowd of happy children were floating boats letting the water trickle through their fingers and licking and drinking the water which is safe. Under a shady tree a group of three year olds were lying on the grass reading and looking at pictures of their story books. They borrowed books from the school library. Some children were practising ballet dancing and some others were listening and memorizing for a dramatised version of a scene from the Arabian Nights. I heard music around me and band with rhythm and tunes. What an atmosphere of purposeful activity! I found little children trying to accustom themselves to the new environment changing their behaviour to suit to new demands.

It is true that every nursery school should share the joy of freedom, iniative, self reliance and spontaneity. They should grow naturally. One of the ladies probably a parent teacher asked me about the Indian kindergarten system (my daughter had introduced me as a teacher's teacher). I just said it is all very different in our part of the country. I said something that a classroom is used as a place for learning. She corrected me stating that a classroom is for growing and living, where learning is a by - product.

Education has been defined as that which makes children fit to live in society. We should prepare them to function efficiently as self-supporting citizens in a civilized state. This implies much more than knowledge and information, science and technology. In fact, it comprehends all the societal virtues and values like self respect, courtesy, honesty, kindness and consideration for others. In the nursery classes we lay the foundation. At a very early stage little

* Former Principal, College of Teacher Education, Thiruvananthapuram

ones should recognize the difference between liberty and licence while enjoying their own privileges. They should learn to respect others. Emphasis should be given to cooperation rather than competition. We should see to it that children are trained in habits of personal hygiene including cleaning of hands, legs and finger nails, wearing clean dress, adopting clean habits of eating – all are learned at the nursery level.

Nursery kids should know how to use dusters, brushes and towels to keep their cupboards clean.

As for reading, one has to see the eagerness with which an exercise was finished and a picture book was rewarded from the lending library. Somewhere a bell rang and drill monitors with balls and ropes, hoops and tennicoit rings, towels and drinking water rushed out. Children started their game in right seriousness. The other group were practising on piano, guitar, flute and a mouth organ.

Flannels and towels were marked with signs and they knew how to strictly use their own personal towels. They look into a long mirror and combed their hair with particular care with parting of hair. There were clean labels with clean table clothes and plates, spoons and forks. The walls of the rooms were decorated with nursery rhymes and appropriate pictures.

They had a short prayer before taking food. After finishing eating they took the tray to the washing sink washed , dried and placed them on racks. Children used "please, "thank you", "excuse me" and "pardon me" along with their talks.

The time for a nap was announced and children took sheets, blankets and pillows marked with their own signs so that there is no chance of infection from one child to another. Some kids cuddled with soft safe toys and soon they were fast asleep. Teachers were moving softly between the sleeping kids taking notes on particular postures, breathing and restlessness and other movements while sleeping. Children woke up by themselves and sometimes they were woken up. They got dressed and took their bed back to a rack in a store room. Then they listened to music and also saw films which they liked and were allowed freely to dance or sing. After drinking the orange juice children learned to wash cups in a sink full with soapy water and I found they enjoyed their job.

A group of children were busy getting their Lesley dolls dressed up and they were put on a pram. Another group was shopping for fruits. There was a table for a counter on which to apples , carrots and pears were displayed.

No payments was made with pretend money because the nursery kids had not reached the stage of taking money into account. Some children were drawing and painting pictures and some kids were learning to dance and sing. They were all having a lovely time without any tears. There was a play house with swings and see saws, rocking horses, trucks, bus and helicopters. Some kids had removed their shoes and were waiting their turn to see how much they weighed and how tall were they. There was a first aid box in that place. Everywhere children were seen in a group and they were learning to co-operate and share in a systematic way. They had well modulated voice and careful pronunciation.

I found a session of role play and story telling. Children who were grouped around the teacher repeated sounds and rhymes. They enacted the story of the Three Bears and Goldi Locks. After the play, they did put on their hats and coats and readied themselves to leave for home. Mothers, grandmothers, brothers and sisters came to fetch them. I could see happy children growing in the class. They did smile at me – a grandmother wearing a sari – which even their grandmothers were surprised to see. I happily returned the smile.

Education is growth and development of personality. It is in the classroom that we start growing into a fine personality. The destiny of a nation is formed in her classroom. We said good bye to the smiling faces and returned home. Let me finish the paper with the key note of the western (American to be true) nursery as : Naturalness, complete absence of artificiality which we call spontaneity. School is life and life is school.

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PERSONAL VALUES OF SENIOR SECONDARY SCHOOL STUDENTS IN BIHAR (INDIA)

*Amruth.G. Kumar
**Prabhat Kumar

ABSTRACT

This paper is an attempt to study the personal values of secondary school students in Bihar. This study gains its attention because Bihar is one of the most backward states in India with lowest literacy rate and high crime rate. Value oriented future generation has become an imperative need for the state to rescue itself from the whirlpool of social evils that it is suffering from. The sample for the study was 300 senior secondary school students from Bihar. An adopted tool was used for collecting data. Findings of the study carry serious implications for the current practices.

INTRODUCTION

Education plays a vital role in giving human beings proper equipment to lead a gracious and harmonious life. Education changes the behavior of an individual and helps in giving a proper meaning to life. The potentials of man due to scientific advancement can destroy mankind unless the human relationships and education are guided by values.

The term 'value' was first time used in economics, then spread to many other disciplines including Philosophy. A value is considered as an endeavour or effort which satisfies a need system, psychologically and philosophically. Human beings differ in their psychological needs; hence different in their value systems. Values help man in self-drive and self – evaluation. Values impart significance to life and meaning to death. Without values, life becomes a series of meaningless events and a shattering experience.

Thus value is something or anything (material or non-material) which appeals to us, satisfying our needs, whether it is material or non- material, satisfaction or desirability are common elements in it. Konappa (1973) proposed that value formation within individuals is a developmental phenomenon. It is constant and a neverending process through the total life-span, but with a peak in adolescence. It is an intellectual as well as emotional process.

Rokeach (1973) argued that, in a broad sense, values may be assumed to express basic human needs and, in the final analysis, they are "the conceptual tools and weapons" that we employ in order to maintain and enhance self esteem. They serve adjustment, ego-defensive and knowledge functions.

Today's society is facing a lot of problems, confusions and contradictions. Society is

*Assistant Professor, School of Education, Pondicherry University
** Research Scholar, Guru Khasidas Central University, Chathisghut

suffering from problems like poverty, pollution, unemployment, depletion of natural resources on one side and on the other side they are ignoring basic values like humanity, courage, spirituality, integration etc. On one side the entire globe has become a village due to information technology revolution and on the other side people are leading miserable life. Boosting economic development and disregarding the values of life can cause a threat to humanity on the globe.

Values may be operationally conceived as those guiding principles of life which are conducive to physical and mental health as well as to social welfare and adjustment and which are in tune with one's culture. Values are considered as the vision for better living and foundations of meaningful life.

Values help in character building, man making and nation building. They bring joy, satisfaction, direction, firmness and quality to life. They enable an individual to be really modern and deeply human. They develop a democratic way of living and thinking. Values also develop tolerance towards other religions and a sense of brotherhood at social, national and international levels. On the other hand, they attempt to balance science and technology with ethics and religion and quantitative expansion with qualitative improvement.

Values are often caught rather than taught. Values can, therefore, be inculcated by creating the right atmosphere and promoting learning by examples rather than precepts. The sources of values include social-cultural traditions, philosophy and ideals of society, our constitution, religions, eminent personalities, community, ideal home and institutions, scriptures, advances in science and technologies, media, person's creativity, status of society etc.

This is the age of science. Modern scientific, technological and industrial developments have revolutionised man's life on earth. These changes have its own effects in India also. The students who are the future citizens have to be trained to respond and adjust with social changes satisfactorily by equipping them with desirable skills and values. Modern India has been committed to the guiding principles of socialism, secularism, democracy, national integration and so on. These guiding principles should be emphasised in the educational system as suitable values to be inculcated in the pupils for promoting equality, social justice, national cohesion and democratic citizenship. Hence, the need for inculcating desirable values is felt more important than teaching many subjects giving more knowledge at present.

WHY THIS STUDY IN BIHAR?

"Bihar" is derived from "vihar," meaning "monastery". Here, some 2,500 years ago Buddha is said to have achieved enlightenment. His contemporary, the Jain teacher Mahavira, also originated from here. About 200 years after the Mauryan Empire arose, centered in Bihar and stretching from modern day Afghanistan to most of the Deccan, from Pakistan to the east coast of India. In the 5th century the Guptas founded Buddhist University at Nalanda, which was one of the world's most prestigious centers of learning of the first millennium. The Mauryas and Gupta are associated with two "Golden Ages" in India. But as Buddhism began to decline in the later centuries of the first millennium, so did Bihar.

The rich and glorious history of Bihar stands in contrast to its condition today. While much of India is witnessing a huge economic boom, Bihar is still mired in abject poverty. About 83 million people live in Bihar, a state about half the size of Germany. Literacy stands at 33% for women (one of the lowest in India) and 60% for men. Most villagers live in houses made of stacked bricks mortared only with mud-structures that kill an

maim thousands when earthquakes or floods hit. Plumbing and sanitary facilities are meagre; fetid water, waste, and piles of unprocessed garbage blight every town and village. The potbellies of malnourished children are more visible here than any other place in India in recent years. On top of this, crime runs rampant, as thugs plunder and murder with impunity. Highway and train robberies are common. Bihar also has bands of radicalized, illiterate Maoist revolutionary terrorists (Naxalites) who bombed two nearby targets during our visit. Bihar's Chief Minister rides in special bullet-proof vehicles. On the other hand, this violence does stand out in India. Bihar is probably not more dangerous or violent than many major American cities. And for all the poverty, there is not a correspondingly higher number of beggars in Bihar, perhaps because the poverty is too even and there are no tourists (Buddhist pilgrims tend to remain cloistered in their tour packages).

Since the late 1980s and through 2005, poor governance and annual flooding of Bihar by Kosi River (Sorrow of Bihar) contributed to a crisis in the Bihar economy. The criminalisation of politics, and kidnappings of professional workers between 1990-2005 contributed to an economic collapse and led to the flight of capital, middle class professionals, and business leaders to other parts of India. This flight of business and capital increased unemployment and this led to the mass migration of Bihari farmers and unemployed youth to more developed states of India. The state has a per capita income of ₹ 148 a year against India's average of ₹ 997 and 30.6% of the state's population lives below the poverty line against India's average of 22.15%. The level of urbanisation (10.5%) is below the national average (27.78%); and behind states like Maharastra (42.4%). Urban poverty in Bihar (32.91%) is above the national average of 23.62%. Also using per capita water supply as a surrogate variable, Bihar (61 litres per day) is below the national average (142 litres per day) and that of Maharastra(175 litres per day according to 2006 data) in civic amenities. Perhaps these situations are the reasons that made Bihar one of the most crime affected states in India.

What is the role of education in solving the plight of this culturally rich state? This paper is the result of such a thought. Values of the individual have crucial role in ensuring a peaceful social life. Since schools have vital importance in the value formation of children, this study looks into the personal values of school children. School for us is the place for acquiring values next to home. Unfortunately stories about behavioural problems of students from schools in Bihar flummox the state and nation as well. In this context, it has become necessary to understand value perceptions of our younger generation in schools. It is believed that the present study may help decision - makers and policy - makers to take right decisions to make policies in the right direction to a great extent.

OBJECTIVES

- To test whether proportions of comparable subsamples (male X female, rural X urban and govt. occupation X non govt occupations) selected for the study with different levels (high, moderate and low) of personal values differ significantly.
- To test whether the personal values of following subsamples differ significantly:
  - male and female students
  - urban and rural students
  - students whose parents are government employees and non-government employees.

HYPOTHESES

1. Majority of the students (total sample) will have moderate level of personal values.

2. Proportions of boys with different levels (high, moderate and low) of personal values will not be significantly different from proportion of girls with different levels (high, moderate and low) of personal values.
3. Proportions of urban students with different levels (high, moderate and low) of personal values will not be significantly different from proportion of rural students with different levels (high, moderate and low) of personal values.
4. Proportions of students whose parents have government occupation with different levels (high, moderate and low) of personal values will not be significantly different from proportion of students whose parents have non-governmental occupation with different levels (high, moderate and low) of personal values.
5. Male and female secondary school students will not differ significantly in their personal values.
6. Urban and rural senior secondary schools students will not differ significantly in their personal values.
7. Students whose parents are employed in government and non-government occupations will not differ significantly in their personal values.

METHODOLOGY

SAMPLE

The sample was drawn from six randomly selected schools of Nawada, Sheikpura, Nalanda, and Patna of Bihar state. The sample consisted of 300 higher secondary school students. The sample design is shown in the following table.

INSTRUMENTATION

Personal Values Questionnaire (PVQ) constructed and standardized by Sherry, G.P. and Verma, R.P. was used for data collection.

STATISTICAL TECHNIQUES

The major statistical technique used was t- test for testing the differences in mean scores of Personal Values Questionnaire obtained by students belonging to groups based on the demographic variables. Results of the analysis are given in the following paragraphs.

TESTING OF HYPOTHESES

The results are given below:

Hypothesis-1

Hypothesis one states that 'majority of the students (total sample) will have moderate level of personal values'. For testing this hypothesis first of all total sample was classified into three groups. This was done using the statistical formula $\mu \pm 1$ (Where μ= mean and = Standard deviation). After classifying the total sample in to three groups, percentage of each group to total was calculated. The details are given in table 1.

Table 1

Percentage of students belonging to High, Moderate and Low levels of Personal Values

Groups	Number	Percentage
High	58	19.33
Moderate	155	51.66
Low	87	29.00

The table shows that only 19.33 percentage of students have high personal values, while 29 percentage belong to the group of low personal values. Since majority of the subjects belong to moderate group, hypothesis one is accepted. Reason for this can be explained on the basis of socio- cultural and economic background of Bihar.

Hypotheses-2, 3 and 4

Hypotheses 2,3 and 4 state that proportions of comparable subsamples (male X female, rural X urban and govt. occupation X non govt occupation) selected for the study with different levels (high, moderate and low) of personal values will not be significantly different.

The differential effect of these comparable subsamples on three levels of values was studied. For this, the proportion of high level, moderate and low level was obtained for each of the subsamples selected for the study. The actual numbers falling into the different classifications and the equivalent percentages and their t-values are presented in table 2.

Table 2

Proportions of comparable subsamples falling into the three levels.

Sub samples	Gender		t	Locale		t	Parental Occupation		t
	Male	Female		Rural	Urban		Govt.	Non.govt.	
Number	*166*	*134*		*123*	*177*		*116*	*184*	
High (%)	16.31	24.41	1.75	20.44	21.36	*0.16*	19.46	17.32	0.46
Moderate (%)	51.12	48.65	0.42	61.56	64.76	0.04	53.87	68.21	2.50*
Low (%)	32.57	26.94	1.06	18.00	13.88	0.82	26.67	14.47	2.62*

**indicates significance at 0.05 level.*

The test of significance for different levels reveal that the proportion of male and female students and rural and urban were not significantly different at any levels of personal values (high, moderate and low). When students whose parents have govt. occupation and non-govt. occupation were compared, except for one level (high), moderate and low levels showed significant differences in their proportions. It is interesting to note that children of parents occupying non-govt. jobs in the moderate group have higher proportion than that of students whose parents have government jobs. Just opposite was true in the matter of students belonging to the group of lower personal values.

Hypothesis-5

The fifth hypothesis states that "male and female secondary school students will not di significantly in their personal values"

Table 3

Results of test of significance of difference in personal values of senior secondary school students based on their gender

S.N.	Category	Number	Mean	S.D	t-value
1	Male	166	120.86	12.696	0.257
2	Female	134	120.57	2.550	

The obtained t- value (0.257) is less than the value to be significant at 0.01 level. Therefore, hypothesis. 5 is accepted. This shows that male and female students did not differ in their pers values.

Hypothesis-6

The sixth hypothesis states that "urban and rural senior secondary school students will not di significantly in their personal values".

Table 4

Results of test of significance of difference in personal values of senior secondary school students based on the locality of institution

S.N.	Category	Number	Mean	S.D	t-value
1	Urban	123	120.24	2.785	0.251
2	Rural	177	121.08	12.264	

The obtained t- value (0.257) is less than the value to be significant at 0.01 level. Therefore, hypothesis 6 also is accepted. Thus, this finding shows that students studying in institutions at ru and urban locality did not differ in their personal values.

Hypothesis-7

The seventh hypothesis states that "there exists no significant difference in personal values students whose parents are employed in government and non-government occupations".

Table 5

Results of test of significance of difference in personal values of senior secondary school students based on their parental occupation

S.N.	Category	Number	Mean	S.D	t-value
1	Government	116	121.48	15.005	1.076
2	Non-Government	184	120.26	2.834	

The obtained t-value is less than the table value to be significant at 0.01 level. Therefore, the seventh hypothesis is accepted as the difference in the personal values of senior secondary school students based on their parental occupation is not significant.

CONCLUSION

The major conclusion drawn from the findings of the study are:

1. Majority of the senior secondary school students (total sample) in Bihar have moderate level of personal values.
2. Proportion of male senior secondary students with different levels (high, moderate and low) of personal values were not significantly different from proportion of female senior secondary students with different levels (high, moderate and low) of personal values.
3. Proportion of urban senior secondary school students with different levels (high, moderate and low) of personal values were not significantly different from proportion of rural students with different levels (high, moderate and low) of personal values.
4. Proportion of senior secondary school students whose parents have government occupation and with high level of personal values was not significantly different from proportion of students whose parents have non-governmental occupation and with higher level of personal values.
5. Proportion of senior secondary school students whose parents have government occupation with moderate and low levels of personal values were significantly different from proportion of students whose parents have non-governmental occupation with moderate and low levels of personal values.
6. Proportion of senior secondary school students having moderate level of personal values and whose parents have non govt. jobs was significantly greater than their counterparts whose parents have government job.
7. Proportion of senior secondary school students having low level of personal values and whose parents have government jobs was significantly greater than their counterparts whose parents have non-government jobs.
8. Male and female senior secondary school students did not differ significantly in their personal values.
9. Urban and rural senior secondary school students did not differ significantly in their personal values.
10. Senior secondary school students whose parents having govt. occupation and non govt. occupation did not differ significantly in their personal values.

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RELATIONSHIP BETWEEN SCIENTIFIC APTITUDE AND PROCESS OUTCOMES IN PHYSICS OF HIGHER SECONDARY STUDENTS

* Dr. Mini Kumari. V.S
** S.R.Saranya

ABSTRACT

We live in a science - based world. The Education Commission of 1964-66 states, "We are not at a crucial stage in the process of development and transformation and in this context the role of science is of utmost importance". Science education must become an integral part of school education. Hence the basic function of the school education is to bring changes in the way an individual thinks, feels and acts. It should enable the individual to keep in pace with the knowledge explosion of our time. In this present study the investigators made an attempt to study the relationship between scientific aptitude and process outcomes in physics of higher secondary students. Normative survey method was adopted for the present study. From this study it was found that the scientific aptitude and process outcomes in physics of higher secondary students are positively and significantly correlated with each other.

INTRODUCTION

The importance of science is recognised all over the world and is generally accepted that some knowledge of science is an important part of a liberal education. We live in what is called "the scientific age". An education intended to fit us for graceful and purposeful living will be grievously ill directed if it takes no account of the intellectual climate of the present day , permeated as it is with the ideas and hopes of the scientists.

The science teaching should be based on the interest, ability and aptitudes of the children. Priority should be given to activities in science teaching. Students should be encouraged to participate in various activities. Both indoor and outdoor activities should be given equal importance. This will help to develop scientific aptitude among the students. Scientific aptitude is a complex of interacting hereditary and environmental determination producing predispositions or abilities. It is a potentiality for future accomplishment in science without regard to past training and achievement. It appears to be dependent upon a variety of factors such as study skill, motivation and persistence in learning of a subject, socio-economic factors, cultural background, interest and attitudes.

Science as an intellectual endeavor is often thought of as consisting of two parts—process and product. The product of the science consists of facts, concepts, theories and principles which are derived from observation and experiments. But the process of science is slowly interpreted

* Associate Professor in Biological Science, NVKSD College of Education, Attoor
** Assistant Professor in Physical Science, RPA College of Education, Mamoottukadai.

as hypothesizing, designing experiments, recording, analyzing data and inferring. However, the process of science consists of an awareness of values underlying science.

The process outcomes in science are influenced by a number of factors such as intelligence, creativity, scientific attitude, scientific aptitude etc. Several studies have been conducted on the relationship between process outcomes and intelligence, creativity, scientific attitude etc. A review of relevant related literature showed that there are no studies on the relationship between scientific aptitude and process outcomes in physics. The present study is an attempt to find out the relationship between scientific aptitude and process outcomes in physics of higher secondary students.

OBJECTIVES

1. To find out if there is any significant difference in higher secondary students' scientific aptitude based on sex,locale and type of school.
2. To find out if there is any significant difference in higher secondary students' process outcomes in physics based on sex, locale, type of school and level of scientific aptitude.
3. To find out the relationship between the scientific aptitude and process outcomes in physics for the whole sample and the relevant sub-samples.

METHOD

The investigator adopted normative survey method for the present investigation.

SAMPLE

The sample for the present study consists of 400 higher secondary students studying in different schools of Kanyakumari district. The investigator has adopted stratified random sampling method.

TOOLS

The investigator used the following tools for the collection of data

- Scientific aptitude test battery prepared by Agarwal and Saroj Arora (1998).
- Test of process outcomes in Physics prepared and validated by the investigator.

RESULTS AND DISCUSSION

Table-1

Comparison of scientific aptitude scores of various groups

Variable	Category	Number	Mean	S D	C R	Level of Significance
Sex	Boys	205	61.53	9.96	2.75	0.01
	Girls	195	58.26	13.42		
Locale	Urban	203	59.03	8.94	1.98	0.05
	Rural	197	57.45	6.89		
Type of Institution	Government	200	58.5	8.21	5.83	0.01
	Private	200	63.68	9.49		

The analysis of the scores of boys and girls shows that the mean scores of boys is higher than the girls. The obtained t value(2.75) is significant at 0.01 level. This shows that there is significant difference between the boys and girls in their scientific aptitude. The analysis of the scores of urban and rural students shows that the mean score of urban students is higher than the rural students. The obtained t value(1.98) is significant at 0.05 level. This shows that there is significant difference between urban and rural students in their scientific aptitude. The analysis of the scores of government and private school students shows that the mean score of private school students is higher than the government school students. The obtained t value(5.83) is significant at 0.01 level. This shows that there is significant difference between government and private school students in their scientific aptitude.

Table-2

Comparison of process outcomes in physics scores

Variable	Category	Number	Mean	S D	C R	Level of Significance
Sex	Boys	205	28.53	3.61	3.83	0.01
	Girls	195	31.12	8.8		
Locale	Urban	203	30.17	7.12	3.12	0.01
	Rural	197	28.07	6.39		
Type of Institution	Government	200	28.33	7.94	5.36	0.01
	Private	200	33.14	9.81		

The analysis of the scores of boys and girls shows that the mean score of girls is higher than that of the boys. The obtained t value(3.83) is significant at 0.01 level. This shows that there is significant difference between the boys and girls in their process outcomes in physics. The analysis of the scores of urban and rural students shows that the mean score of urban students is higher than the rural students. The obtained t value (3.12) is significant at 0.01 level. This shows that there is significant difference between the urban and rural students in their process outcomes in physics. The analysis of the scores of government and private school students shows that the mean score of private school students is higher than the government school students. The obtained t value (5. 36) is significant at 0.01 level. This shows that there is significant difference between government and private school students in their process outcomes in physics.

Table 3

Coefficient of correlation between scientific aptitude and process outcomes in physics of total sample and subsamples

Category	Number	r	Level of Significance
Total	400	0.512	0.01
Boys	205	0.497	0.01
Girls	195	0.528	0.01
Urban	203	0.489	0.01
Rural	197	0.516	0.01
Government	200	0.505	0.01
Private	200	0.524	0.01

As shown in the above table the scientific aptitude and process outcomes in physics of higher secondary students are positively correlated and significant at 0.01 level for the total sample and the subsamples. This indicates a direct relationship between scientific aptitude and process outcomes in physics of higher secondary students.

CONCLUSION

Based on the findings that emerged from the present study the following conclusions were drawn.

1. The higher secondary students have average attainment of various process skills.
2. Sex, locale and type of management of the school have influence on both scientific aptitude and process outcomes in physics of higher secondary students.
3. Scientific aptitude and process outcomes in Physics of higher secondary students are positively and significantly correlated with each other.

Since the process skills attainment of high secondary students is only average, classroo teaching- learning process should be so plann so as to develop various process skills amo students. Seminars, orientation courses etc f teachers should be organized so as to make the understand how process skills can be develop among students.

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Frontiers in Education and Research
N.V.K.S.D College of Education, Attoor
nvksdcollege@rediffmail.com

EFFECTIVENESS OF REALISTIC MATHEMATICS EDUCATION OVER CONVENTIONAL METHOD OF TEACHING MATHEMATICS OF STANDARD VIII PUPILS

• Dr.C.M.Bindhu
•• Smt. Sini. K.S.

ABSTRACT

This study was conducted to test the effectiveness of realistic mathematics education over conventional method of teaching mathematics. The study was conducted by employing the true experimental design. The sample consists of 82 students (39 - experimental group & 43 - control group). The tools used were, Lesson transcripts, Achievement test in Realistic Mathematics Education, Verbal Group Test of Intelligence and Socio- Economic Status Scale. The statistical techniques used were Test of significance of difference between means, Analysis of Covariance and Scheffe' test of post-hoc comparison. The major finding of the study is that realistic mathematics education is more effective over conventional method of teaching for enhancing the maximum achievement of the learners.

INTRODUCTION

Up to now the teaching process in mathematics classroom is still conducted mainly with a traditional approach. Teachers actively explain the material, provide examples and exercises, where as the students act like machines, they listen, write and perform the tasks initiated by the teacher. Group or whole class discussion is seldom present and interaction as well as communication is often missing. Likewise, mathematical goals and curricular materials used in the classroom are still based on 'mathematician' mathematics not on student mathematics with a focus on real life application. This is contrary to the needs of the information society in which mathematics literacy is an important goal. In summary, it is clear that goals, content, and teaching and learning approach in the mathematics classroom need to be reformed.

Mathematics is difficult because it is a highly conceptualized subject, the abstract notions involved are difficult to understand and the symbolism is highly stylized. Then, due to hierarchical nature of mathematics, a failure to understand concepts can leave pupils being unable to progress to the next stage of their mathematics (Sonija, 2003).In an attempt to combat the low achievement in mathematics of students, researchers cite various causes, including inaccurate learning materials, inadequate mechanistic teaching methods, poor forms of assessment and the anxiety of students towards mathematics etc. One of the promising approaches towards the teaching and learning of mathematics that is thought to address these problems is Realistic Mathematics Education

* Associate Professor, Farook Training College, Calicut
* Assistant Professor in Maths, CUTEC Wayanad.

(RME) RME is a theory of teaching and learning mathematics that has been developed in Netherlands in early 70's Contrary to the current mathematics education, RME uses realistic and interdisciplinary materials as a source as well as a starting point for mathematics teaching. Its accompanying teaching approach represents democratic forms of interaction through discussions, and its assessment accepts all strategies in the form of free contributions, or production of all students. These principles of RME are relevant with respect to the aim of engaging mathematics education to democracy (Heuvel, 1998)

A fundamental issue that differentiates RME from an exploratory approach is the manner in which it is taken into account, both of the collective mathematical development of the classroom community and of the mathematical learning of the individual students who participate in it. Then RME is aligned with recent theoretical developments in mathematics education that emphasize the socially and culturally situated nature of mathematical activity.

The use of context problems is very significant in RME. This is in contrast with the traditional, mechanistic approach to mathematics education, which contains mostly bare, 'naked problems'. If context problems are used in the mechanistic approach, they are mostly used to conclude the learning process. The context problems function only as a field of application. By solving context problems the students can apply what was learned in the bare situation. In RME this is different. Context problems also function as a source for the learning process. In other words, in RME, context problems and real life situations are used both to constitute and to apply mathematical concepts. While working on context problems the students can develop mathematical tools and understanding. First, they develop strategies closely connected to the context. Later on, certain aspects of the conte situation can become more general which mea that the context can get more or less the charac of a model and as such can give support t solving other but related problems. Eventual the models give the students access to mo formal mathematical knowledge.

Another notable difference between RM and traditional approach to mathemati education is the rejection of the mechanis procedure focused way of teaching in which learning content is split up in meaningless sm parts and where the students are offered fix solving procedures to be trained by exercis often to be done individually. RME on t contrary has more complex and meaningf conceptualization of learning. The studen instead of being receivers of readyma mathematics are considered as active participa in the teaching learning process in which th develop mathematical tools and insights. In th respect RME has a lot in common with soci constructivist based mathematics educatio Crucial for the RME teaching methods is th students are also offered opportunities to sha their experience, with others.

In USA, RME is adopted in the "Mathemati in Context" text books for grades 5-8. After t books were used by students in several scho districts from different states, a preliminar research was conducted by Romberg an Lange,(1987). The study showed that th students' achievement on the national test high increased. In the Netherlands where RM originally has been developed and implement for about 30 years, there are also positive result that can be used as indicators that RME migh be promising to increase the quality o mathematics education. Based on the survey related studies, RME looks promising to b introduced and implemented on the Indian scen because it could increase pupils understandi

and motivation toward mathematics achievement (Kwon, 1993; Fauzan,2004; Koeno,1999; Streefland,2000). The above mentioned studies substantiate that RME is effective than traditional method of teaching mathematics. So the investigators have takenup the present study.

OBJECTIVES

1) To compare the mean pretest scores of experimental and control groups.
2) To compare the mean posttest scores of experimental and control groups.
3) To compare the mean gain scores of experimental and control groups.
4) To study the effectiveness of Realistic Mathematics Education over conventional method of teaching mathematics of standard VIII pupils.

HYPOTHESES

1) There will be no significant difference in the mean pretest scores of experimental and control groups.
2) There will be no significant difference in the mean post-test scores of experimental and control groups
3) There will be no significant difference in the mean gain scores of experimental and control groups.
4) Pupils taught through Realistic Mathematics Education will not significantly differ in their achievement from pupils taught through conventional method of teaching.

SAMPLE

Two intact class divisions of standard VIII from two schools are selected as samples, one for the control group and the other for the experimental group. The experimental group consisted of 39 subjects and the control group consisted of 43 subjects .

METHOD

The present study has been conducted by employing the True Experimental Design. The design used in the present study was the Pretest-Posttest Equivalent Group Design. The experimental group was taught through the Realistic Mathematics Education and the control group was taught through the conventional method of teaching.

TOOLS

- Lesson transcript for Realistic Mathematics Education (Kumar & Sini)
- Lesson format for conventional method of teaching(Kumar& Sini)
- Achievement test in Realistic Mathematics Education(ATRME)(Kumar & Sini)
- Pretest and Posttest (ATRME is used for both test)
- Verbal Group Test of Intelligence (VGTI)(Kumar et al)
- Socio-Economic Status Scale (Kumar)

STATISTICAL TECHNIQUES

- Test of significance of difference between means
- Analysis of Covariance
- Scheffe's test of post-hoc comparison

ANALYSIS AND INTERPRETATION

Comparison of the performance of experimental and control groups on pretest, posttest (total and objective wise) and gain scores.

The mean and standard deviation of pretest, posttest and gain scores between experimental and control groups were calculated separately and the significance is tested using test of significance of difference between means. Result of test of significance of difference between means is presented in table-1.

Table-1

Data and Results of the t-test for the Mean scores of Pretest, Posttest (objective wise and total) and Gain scores between Experimental and Control groups

Variable	Experimentalgroup			ControlGroup			t-value	Level of significance
	M1	N1	SD1	M2	N2	SD2		
Pre-test	6.0256	39	1.799	5.6744	43	2.275	0.77	NS
Knowledge	3.4872	39	0.644	2.7674	43	1.445	2.96	0.01
Comprehension	4.3590	39	1,328	2.7674	43	1.377	5.33	0.01
Application	6.2308	39	2.299	3.2093	43	1.266	7.32	0.01
Analysis	1.6923	39	0.569	0.7674	43	0.782	6.16	0.01
Synthesis	1.8462	39	0.366	0.9070	43	0.750	7.31	0.01
Evaluation	2.2821	39	0.724	1.093	43	0.895	6.64	0.01
Post-test (total)	19.9231	39	3.903	11.6047	43	4.101	9.41	0.01
Gain score	13.8974	39	4.745	6.0465	43	4.326	7.8	0.01

It can be seen from table-1 that the t-value is below the limit set for 0.01 level of significance for the variable pretest. So no significant difference is found in the mean scores of pre-test. The obtained t-values for post -test (total and objective wise) and gain scores are found significant at 0.01 level. This result indicated that the mean performance of the experimental and control groups on their pretest and gain scores are different.

Effectiveness of Realistic Mathematics Education over conventional method of teaching mathematics of standard VIII pupils.

For studying effectiveness of Realis Mathematics Education over conventio Method of teaching mathematics of standard VI pupils, single factor ANCOVA with fo covariates in combination is employed. In t ANCOVA, two levels of teaching method (RM and CMT) as independent variable w incorporated with four covariates namely the pr experimental status of the sample measured terms of pretest, Intelligence (verbal and n verbal) and Socio-Economic Staus. Achievem in mathematics was considered as the depende variable. Result of the ANCOVA is summariz in table-2.

Table-2

Summary of ANCOVA for Achievement in Mathematics-Pretest, Intelligence (verbal and non verbal), and Socio-Economic Status as Covariates in Combination

Sl.No	Source of Variation	Sum of Squares	df	Mean Square Variance	F-value	Level of Significance
1	Group	1023.97	1	1023.97	82.76	0.01
2	Within Cells	940.38	76	12.37		
	Total	1964.35	81	-		

As per table-2 the obtained 'F' value for the group is found well beyond the tabled value set for 0.01 level of significance and therefore significant at 0.01 level (df 1,76). This result suggests that, there exists statistically significant difference between the two groups even after making a linear adjustment to remove the combined effect of the four covariates at a time.

Adjusted Means of Post-hoc Comparison

An additional analysis was employed in order to determine which one of the two groups cause difference from another in terms of the variation in the criterion mean. With ANOVA the Post-hoc comparison was made with the adjusted criterion mean for experimental and control groups is presented in table-3.

Table-3

Adjusted Criterion Means for Experimental and Control Groups

Adjusted means	Experimental Group	Control Group
	19.521	12.006

Scheffe's Test of Post-hoc Comparison

Scheffe's test of post-hoc comparison was used as the technique to compare the adjusted criterion mean of the experimental and control groups. The details are presented in table-4.

Table-4

Result of the Scheffe's Test of Multiple Comparison between Adjusted Means of Achievement in Mathematics for the total sample based on two groups.

Sample	N	Dependent Variable	Groups compared	Means		F-value	Value of F		Level of significance
				M1	M2				
Total	82	Achievement	Experimental and Control	19.52	12.01	92.31	3.96	6.96	0.01

As per the table-4 the obtained 'F' value for the comparison between the experimental and control groups is 92.31. The corresponding F value is found greater than the value of 'F' required for significance at 0.05 and 0.01 levels. It can be inferred from the result that significant difference in achievement scores is evident between the two groups.

CONCLUSION

The findings of the study imply that RME is more effective over conventional method of teaching for enhancing the maximum achievement of the learners. Based on the findings, following practical methods are suggested: RME seems to be promising instructional approach that meets the need for improving mathematics teaching. In the concept of RME, mathematics is a human activity and should be connected to reality. The concept of RME is characterized by student's activity to reinvent mathematics under the guidance of an adult, and the reinvention should start from exposure to a variety of real world problems and situations. Nowadays most researchers in the field of mathematics education consider learning as construction process. In RME, this construction processes described as a process of reinvention, students recapitulate the learning process of mankind. This means that pupils are free to make discoveries at their own level. In general the role of the teacher in RME approach is that of a facilitator, motivator and guide.

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A COMPARATIVE STUDY ON SCHOOL ENVIRONMENT AS PERCEIVED BY C.B.S.E. STUDENTS IN INDIA AND KUWAIT

• Dr.Rani K.V.

ABSTRACT

This paper highlights the impact of school environment perception by C.B.S.E. students in India and Kuwait. Samples were 189 C.B.S.E. students from various C.B.S.E schools in India and Kuwait. Tool used was the School Environment Inventory prepared and validated by the investigator. It was found that C.B.S.E students in Kuwait experience more favourable school management, physical facilities and teaching techniques than the C.B.S.E students in India. There is significant relationship between school environment and achievement of C.B.S.E. students.

INTRODUCTION

Schools provide sensitive environment which enhance the learning process. A sensitive environment refers to a place that supports the activities of young and old students for fostering the intellectual, aesthetic, moral, physical and social development. A physical environment must be welcoming and conducive, social environment must be communicative and interactive, an affective environment must promote a sense of belongingness and self-esteem. An academic environment must be one that encourages learning and self-fulfilment of students. The school's physical environment includes school building, grounds and encompasses room arrangement, seating, bulletin boards, black/white board displays, physical climate, cleanliness, noise, temperature, lighting etc. The psychological climate includes the attitudes, feelings and values of students, staff, and their families. The social aspect of the school environment refers to the school's organization, decision-making process, policies, practices and consistency of enforcement of those policies and practices. Students, teachers, administrators, staff, and visitors who work in an inviting environment feel good among themselves. So it is very relevant to conduct a study on the impact of healthy school environment in different countries which have a positive implication in the academic achievement of its products.

OBJECTIVES

1. To find out whether there is any significant difference in school environment of C.B.S.E. students with respect to background variables
2. To find out whether there is any significant difference in achievement of C.B.S.E. students with respect to background variables.
3. To find out whether there is any significant relationship between school environment and achievement of C.B.S.E. students.

* Assistant Professor in Education, MET College of Education, Chempakaramanputtur.

HYPOTHESES

1. There is no significant difference in the school environment of C.B.S.E. students with respect to their country and gender.
2. There is no significant difference in the achievement of C.B.S.E. students with respect to their country and gender.
3. There is no significant relationship between school environment and achievement of C.B.S.E. students.

METHOD

The investigator selected Normative Survey method for the study.

SAMPLE

Samples were 189 C.B.S.E. students from various C.B.S.E schools in India and Kuwait by multi-stage random design.

TOOL

School Environment Inventory prepared and validated by the investigator.

STATISTICAL TECHINIQUES

t-test and correlation analysis.

ANALYSIS AND INTERPRETATION

Hypothesis : 1.01

There is no significant difference in school environment of C.B.S.E. students with respect to their country

Table: 1

Mean, Standard deviation and 't' value of school environment with reference to country.

Variable	School environment	(102)		(87)		t-value	Remarks
		Mean	S.D.	Mean	S.D.		
Country	School management	43.45	6.768	46.78	6.965	3.318	S
	Physical facilities	45.52	6.387	48.64	6.897	3.206	S
	Role of teachers	46.84	5.959	45.78	6.989	1.111	NS
	Peer relationship	48.54	6.014	46.71	5.076	2.268	S
	Teaching techniques	47.06	6.173	49.56	5.127	3.041	S

At 5% level of significance the table value of t is 1.96

Since the calculated values of t are less than table value at 5% level of significance, the null hypothesis is rejected except for the variable 'role of teachers'. So there is significant difference between C.B.S.E students of India and Kuwait in School management, Physical facilities, Peer relationship and Teaching techniques.

Hypothesis: 1.02.

There is no significant difference in School environment of C.B.S.E. students with respect to gender.

Table: 2

Mean, Standard deviation and 't' value of school environment with reference to gender.

Variable	School environment	Male(75)		Female(114)		t-value	Remarks
		Mean	S.D	Mean	S.D		
Gender	School management	57.17	5.978	58.67	6.534	1.331	NS
	Physical facilities	64.09	6.035	65.78	6.978	1.778	NS
	Role of teachers	54.56	6.096	56.34	6.346	1.851	NS
	Peer relationship	58.39	6.721	55.89	6.121	2.746	S
	Teaching techniques	65.56	6.696	66.78	6.745	1.340	NS

At 5% level of significance the table value of t is 1.96

Since the calculated value of 't is greater than table value at 5% level of significance, the null hypothesis is rejected for the variable 'Peer relationship'. So there is significant difference between C.B.S.E students in India and Kuwait with respect to Peer relationship

Hypothesis :2

There is no significant difference in the achievement of C.B.S.E students with respect to their country and gender.

Table: 3

Mean, Standard deviation and't' value of achievement with reference to country and gender.

Variable	Category	Mean	S.D.	t-value	Remarks
Country	India	84.78	7.893	3.254	S
	Kuwait	87.89	7.927		
Gender	Male	78.67	7.987	3.096	S
	Female	81.89	8.015		

At 5% level of significance the table value of t is 1.96

Since the calculated values of 't' are greater than table value at 5% level of significance, the null hypothesis is rejected . Hence there is significant difference between C.B.S.E. students in their achievement with reference to the variables country and gender.

Hypothesis :3

There is no significant relationship between school environment and achievement of C.B.S.E. students.

Table :4

Relationship between School environment and achievement of C.B.S.E. students.

Sl. No.	N	School environment	'r'value	Table value	remarks
1	189	School management	0.278	0.139	S
2		Physical facilities	0.189		S
3		Role of teachers	0.209		S
4		Peer relationship	0.243		S
5		Teaching techniques	0.237		S

From the above table it is inferred that the calculated 't' values are greater than table value at 5% level of significance. Hence the null hypothesis is rejected. Thus there is significant relationship between school environment and achievement of C.B.S.E. students.

FINDINGS

From the above table it is inferred that

1. C.B.S.E students in Kuwait experience more favourable school management, physical facilities and teaching techniques than the C.B.S.E students in India. But peer relationship is found more among C.B.S.E. students in India. Than the students in Kuwait.
2. Male students in C.B.S.E. schools experienced more peer relationship than the female students.
3. C.B.S.E. students in Kuwait showed high achievement than the C.B.S.E. students in India. With respect to gender, female students showed high achievement than the male students.
4. There is significant relationship between school environment and achievement of C.B.S.E. students.

CONCLUSION

A lively environment is one which stimulates the entire nervous system. Schools have long-lasting implication on academic and social development of students by provi friendly classroom environments for learning meet students' developmental, emotional academic needs. They can create opportunity critical thinking and analysis, can give feedb which contribute their social skills and fo students' efficiency in academic performance teachers have a prime role to provide heal environment in schools. Then only we c develop the young buds to become the pride our nation in future.

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ADOLESCENT STRESS AND SPIRITUAL INTELLIGENCE: AN ANALYTICAL STUDY

• Dr. Sindhya.V

ABSTRACT

Spiritual intelligence provides a general basis for the individual to be able to consider his seeking goals and meaning in life, and to move in the direction of the aims which are personally meaningful. Research has proposed that spiritual beliefs, practices, and commitments seem to be linked with psychological and physical health/ well-being, positive interpersonal performance functioning and improved quality of life. Spiritual orientation about life protects humans against non desirable and non adaptive behaviors. This study was conducted with the objective of finding out relationship between adolescent stress and spiritual intelligence. Data were collected from 120 senior secondary school students in Thiruvananthapuram district. The results showed that high spiritual intelligence is associated with low stress level.

INTRODUCTION

Spiritual intelligence is considered to be the ultimate intelligence and it is through spiritual quotient that we are in a position to solve the issues related to meaning and value. Spiritual intelligence may also be thought of as the root of other types of intelligence for two reasons. This form of intelligence involves pondering the reasons for **existence** and can be related to different types of intelligence (Zohar and Marshall, 2000). It may also be thought of as the ability to form and maintain a relationship with the main source of all beings and to determine the meaning of life (Vaughan, 2002).

Understanding spiritual intelligence seems to be more difficult than understanding emotional intelligence. A concise explanation of the differences between intellectual, emotional and spiritual intelligence is:

- Intellectual and emotional intelligences have definite goals, whereas spiritual intelligence focuses on the progress of consciousness rather than accomplishing tasks.
- Intellectual intelligence depends on information and logic, emotional intelligence depends on emotions and the process of managing emotions to achieve goals, and spiritual intelligence depends on all of these elements and on consciousness about the universe as a whole.

Spiritual intelligence seems to be an ambiguous concept; therefore, the way in which spiritual intelligence is measured is a big question. Some scholars (Emmons, 2000; Zohar and Marshall, 2000) claim that this type of

* Assistant Professor, S.N.Training College, Nedunganda

intelligence cannot be quantified in the way the emotional intelligence or the traditional intelligence can be.

Some examples of the issues related to meaning and value are the constant search of human beings for answers to the fundamental and ultimate questions like: Why was I born? What is the meaning of my life? Does my work give me the satisfaction I need? Do I relate to myself and to the other people well? In what way am I contributing to my and others' happiness? Should I go on even when I am tired or depressed? What makes it all worthwhile? Spiritual Quotient (SQ) helps to answer these questions better than what Intelligence Quotient (IQ) and Emotional Quotient (EQ) in their separate capacities are capable of.

ADOLESCENCE AND SPIRITUAL INTELLIGENCE

Adolescence is the period in which the foundation for future education, major life roles, relationships, and working toward long-term productive goals are established. Similarly, adolescence is an important period for the development of preventive interventions which are designed to lead to the development of more serious psychopathology in adulthood. Adolescence as a formative stage plays a significant role in the study of developmental psychopathology because after this maturational interval, it is difficult to change some behavioural and emotional patterns. In general, adolescence can be defined as a period of high risk and also a period of intense stress and strain. Anyway, some people are likely to be at greater risk than the others. For a long time, many people including Scientists, Philosophers, Clinicians, and literally all observers of human behaviour have noticed that adolescence is a period which is spec significant for the occurrence or intensific of different forms of behavioural and emoti disorders like depression, bipolar illness, e disorders (internalizing problems), delinque violence (externalizing problems) and alco abuse and dependency, drug abuse a dependency (addictive disorders).

SQ allows the intrapersonal and interpersonal emotions to fill the gap betwee and the other. Goleman (1995) wrote ab interpersonal, or within -the-self emotions interpersonal emotions- those we share w others or use to relate to others. However, alone cannot help us bridge the gap. It needs to have knowledge about what we are and w things mean to us, and how things give othe place in our own world. Spiritual intelligence a significant influence on the quality of life it goes without saying that adolescence sensitive period which requires specific trai to make a brighter future.

OBJECTIVES

1. To find out the level of stress an adolescents.
2. To find out the spiritual intelligence adolescents.
3. To study the relationship between spir intelligence and stress among adolesce

METHODOLOGY

The study followed Survey method an relevant data were collected from 120 secon school students in Thiruvanathapuram dis The tool used for the data collection was ch list, observation and spiritual intelligence s developed by the investigator. Stratified ran sampling technique was followed.

Adolescent stress was measured through observation and checklist for a period of two weeks during practice teaching. In order to find out the spiritual intelligence of adolescents, a spiritual intelligence scale was administered to secondary school students including the various components of SI and the score was compared with the stress level of students. The data collected was analysed and interpreted accordingly.

FINDINGS

- On the whole majority of the secondary school students have average level of spiritual intelligence.(71.4% -Average, 12.2%- High, 16.4% - Low) and high level of stress.
- Majority of urban and rural students have average level of spiritual intelligence. Urban (60.4% -Average, 12% - High, 27.6% – low) Rural (76.4%- Average, 14.3% - High, 9.3% - Low)
- Rural students are in a better position than urban students with respect to high level of spiritual intelligence.
- Majority of boys and girls have average level of spiritual intelligence. Girls (66.4% - Average, 15.6% - High, 20%- low), Boys (70.4% - Average, 10.7%- High, 18.9% - low)
- Girls are in a better position than boys with respect to high level of spiritual intelligence.
- Majority of students in government and aided schools have average level of spiritual intelligence. Govt (60.3% - Average, 27.9% - High, 11.8% - low) Aided (74% - Average, 6% - High, 20% - low)
- Students in government schools are in a better position than students in aided schools with respect to high level of spiritual intelligence.
- There is negative relationship between stress and spirituality, ie. high spiritual intelligence is associated with low stress level and vice versa.
- The study reveals that even though the stress level of adolescents is moderately high, those having a high score in spiritual intelligence showed less stress.

CONCLUSION

Reviewing of the literature showed that, spiritual intelligence can improve with training. The spiritual intelligence provides a general basis for the individual to be able to consider his seeking for goals and meaning in life, and to move in the direction of the aims which are personally meaningful. It aids the individual in directing his/her concerns to the wider image and in focusing, consciously, his/her activities in a context that is wider. The training in spiritual dimension of intelligence from the formative years enable students to find a more safe and consistent relief from many of the stress that they are undergoing and also in future life.

The study suggests that teachers should engender the holistic form of intelligence in order to serve students with the most profound gift: enabling them with the ability to create vision and meaning in their lives thereby equipping to manage their stress themselves.

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EFFECT OF YOGA ON SELECTED PHYSIOLOGICAL VARIABLES OF MENTALLY RETARDED GROUP

• Dr. A. Ravi

ABSTRACT

The main objective of the present investigation is to find out the effect of yoga on mentally retarded group. The experimental method was adopted in this study .The sample consists of one hundred and twenty mentally retarded children from the total population of one hundred and fifty students of C.S.I mentally retarded school, Kotticode, Kanyakumari district. Mentally retarded children ranging from Intelligence Quotient of fifty to fifty five percent and thirteen to sixteen years of age were randomly selected as subjects. They were divided into four groups each consisting of thirty subjects. The groups were designated as group A (Age 13 – 14), B (Age 15 – 16)- experimental group and C (Age 13-14), D (Age 15-16) - control group.The physiological variable chosen for the study was Vital capacity. The chosen variable was monitored for significant improvement during mid-training period and post-training period.

INTRODUCTION

Man is the most intelligent and admirable being among all the creations of God. His quest for knowledge is eternal and insatiable and education completely modifies the behavior and personality of the individual.

Mental retardation is the impairment in intelligence from early life, slow mental development during the growth period, reduced learning ability, and lack of social and behavioral adjustment.

It is a state of mental defect from birth or from an early age, because of which a person is unable to perform his duties as a member of the society. His span of attention is less and role of learning and ability to retain what is learnt is also less. His speech is also retarded because speech is something he has to learn from what he hears. Therefore, because of limited ability he learns to speak at a slower level. What he speaks may also be defective because his ability to discern is faulty.

It is a learning disorder in which the abilities of brain's memory to recall, think and reasoning are impaired. Parrot fashion learning of simple musical tunes, nursery rhymes as well as some activities of daily living can be achieved but normal language, comprehension and problem solving can never be expected in severely retarded children. The cognitive learning is also delayed in a mildly retarded child.

Mental retardation is not a disease. It is a disability. It is not infectious. It can happen to rich or poor, educated or uneducated, urban or rural. Mental illness and mental retardation are two different entities. The mentally retarded behave like a person much younger to himself or herself. Such a person remains childlike when grown up.

* Director of Physical Education, N V.K.S.D.College of Education, Attoor.

The movements of the different parts of the body are controlled by the brain. The characteristics of the mentally retarded persons vary, depending upon the level of retardation. The terms currently used to describe the various degrees of mental retardation are mild, moderate, severe and profound. In a mentally handicapped child, the brain develops very slowly because it has been damaged, due to various reasons. This can happen before, during or after birth.

METHOD

Experimental method was employed for the present study.

SAMPLE

One hundred and twenty mentally retarded children of C.S.I mentally retarded school, Kotticode, Kanyakumari district were taken for the present study.

DESIGN

The random group design was employ the study. Two groups were subjected experimental treatment. During the pe experiment, Group A (Age 13-14) and 15-16) were given yoga practice, and C (14) and D (Age 15-16) were given no pr The yoga practice was given for the experi group for one hour in the evening for all the excluding Saturdays and Sundays, for a p of twelve weeks.

DETAILS OF YOGA TRAINING

General warming up was given for ten minutes and the Asanas were given for five to forty five minutes on all the training

RESULTS AND DISCUSSION

Table . 1

Effectiveness of Yoga on Vital Capacity for Total Sample

Stage	Mean	SD	N	Pair	mean difference	paired 't'
Pre	2913.7	182.1	60	Pre Vs Mid	1.7	3.08**
Mid	2915.3	183.3	60	Pre Vs Post	92.5	24.11**
Post	3006.2	186.7	60	Mid Vs Post	90.8	23.51**

** : significant at 0.05 level Required Table value =1.67

Table . 2

Effectiveness of yoga (age group 13-14) on vital capacity

Age	Stage	Mean	SD	N	Pair	mean difference	paired 't'
13-14	Pre	2876.3	205.7	30	Pre Vs Mid	1.7	1.98**
	Mid	2878.0	207.5	30	Pre Vs Post	104.0	18.7**
	Post	2980.3	215.1	30	Mid Vs Post	102.3	18.12**

** : significant at 0.05 level Required Table value =1.69

Table . 3

Effectiveness of yoga (age group 15-16) on vital capacity

Age	Stage	Mean	SD	N	Pair	mean difference	paired 't'
15-16	Pre	2951.0	149.3	30	Pre Vs Mid	1.7	2.41**
	Mid	2952.7	149.9	30	Pre Vs Post	81.0	18.18**
	Post	3032.0	152.5	30	Mid Vs Post	79.3	17.85**

** : significant at 0.05 level Required Table value =1.69

Table . 4

Comparison of vital capacity under yoga and control for total sample Analysis of Covariance (ANCOVA)

Stage	Mean		Source	Sum of Squares	df	Mean Square	F
	Control	Yoga					
Pre-test (X)	2916	2914	Between Groups	163	1	163	0.01
			Within Groups	3812233	118	32307	
			Total	3812397	119		
Post-test (Y)	2918	3006	Between Groups	233201	1	233201	7.04**
			Within Groups	3906578	118	33107	
			Total	4139779	119		
Adjusted Post-test (YX)	2917	3007	Between Groups	245766	1	245766	542.8**
			Within Groups	52973	117	453	

** : significant at 0.05 level Required Table value = 3.93 level

Table . 5

Comparison of vital capacity under yoga and control for age group 13-14 Analysis of Covariance (ANCOVA)

Stage	Mean		Source	Sum of Squares	df	Mean Square	F
	Control	Yoga					
Pre-test (X)	2869	2876	Between Groups	882	1	882	0.02
			Within Groups	2319843	58	39997	
			Total	2320725	59		
Post-test (Y)	2870	2980	Between Groups	181500	1	181500	4.35 **
			Within Groups	2421593	58	41752	
			Total	2603093	59		
Adjusted Post-test (Y.X)	2874	2976	Between Groups	156645	1	156645	333.91 **
			Within Groups	26740	57	469	

** : significant at 0.05level Required Table value = 4.02 level

Table . 6

Comparison of vital capacity under yoga and control for age group 15-16 Analysis of Covariance (ANCOVA)

Stage	Mean		Source	Sum of Squares	df	Mean Square	F
	Control	Yoga					
Pre-test (X)	2963	2951	Between Groups	2282	1	2282	0.1
			Within Groups	1274337	58	21971	
			Total	1276618	59		
Post-test (Y)	2966	3032	Between Groups	66002	1	66002	2.93**
			Within Groups	1308617	58	22562	
			Total	1374618	59		
Adjusted Post-test (Y.X)	2959	3038	Between Groups	92849	1	92849	298.1**
			Within Groups	17753	57	311	

** : significant at 0.01 level Required Table value = 4.02 level

Table . 7

Comparison of percentage change in vital capacity under Yoga based on Age

Age	Mean	SD	N	t
13-14	3.6	1.0	30	3.48**
15-16	2.7	0.9	30	

** : significant at 0.05 level Required Table value = 2.04 level

REPORTS ON THE VARIABLE VITAL CAPACITY FOR THE SUBJECTS

Training imparted has resulted in significant change on the variable in all the subject trainees. Group wise relative improvement is reported as

1. The yoga group (age 13-14) improved better when compared with the control group (age 13-14).
2. The yoga group (age 15-16) improved better when compared with the control group (age 15-16)
3. The yoga group (age 13-14) improved better when compared with yoga group (age 15-16)

FINDINGS

The younger yoga group (age 13-14) responded to the training with positive result when compared with the progress of elder yoga group (age 15-16).

CONCLUSION

The yoga training provided an opportunity to increase fundamental, perceptual motor skills, rhythm, eye-hand and eye-foot co-ordination, gross and fine motor control, endurance, strength, motor planning and skill performance. Participation in yoga training encouraged improved additional behaviors, balance, attending and task orientation, discrimination, transfer and generalization of skills, sense perception and comprehension of body function. Improved motor performance led to a more active role in self-care, social interaction and expression of feelings. Thus, yoga education and training can perform wonders for the severely and profoundly retarded individuals.

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nvksdcollege@rediffmail.com
N V K S D College of Education, Attoor

A COMPARATIVE STUDY ON CONCEPT ATTAINMENT MODEL AND BEHAVIOURIST MODEL OF TEACHING IN ACHIEVEMENT OF MATHEMATICS

• Dr. Gayathri Mohanty,
•• Mr.Zubair P.P.

ABSTRACT

This study was conducted with the objective of finding out the effectiveness of concept attainment model and behaviourist model and to compare the effectiveness of both. Pretest equivalent group design was used in the study, The investigator constructed an achievement test and data were analysed using mean, standard deviation and t-test. The study revealed that the concept attainment model is more effective than behaviourist model of teaching.

INTRODUCTION

Development of models of teaching is one of the important innovations in teaching. A model of teaching is an instructional plan or pattern based on specific learning theory. A model of teaching is an overall plan or patten that a teacher may follow in teaching. It provides guidelines as to teach, how to teach, and what action to take for teaching. It consists of guidelines for designing educational activities and environment. Models of teaching are meant for creating suitable learning environment. Concept attainment model is one of the important models of teaching among the information processing family. This model of teaching is designed to help students learn concepts for organising information and to help students become more effective at learning concepts. Jerom S. Bruner, Jacqueline Goodrow and George Austine developed this model in 1956. This model was based on the assertion that human beings have the inherent capacity to discriminate and categorise things into groups.

In behaviourist model, learning is imitation. A teacher can perform maximum in learning process. So, it is called teacher centred approach. This approach which describes learning as a connection between stimulus and response is the behaviouristic school of thought. This approach to learning emphasises that behaviour begins with reflexes. Behaviourism has its root in what is called the associationistic school of psychology. Behaviourists were strongly influenced by the work of the Russian psychologist Ivan Pavlov. They devoted themselves to study the overt behaviour. They believed that overt behaviour was determined by a complex system of independent stimulus response connection. Thorndike, Watson, Skinner and Guthrie gave more emphasis on objectivity in behaviour. The investigator therefore made an attempt to compare the effectiveness of concept attainment model and behaviorist model of teaching in the achievement of mathematics.

OBJECTIVES

The following are the main objectives of the study

• Reader in Education, Nalini Devi Women's College, Orissa
•• Principal, Majma'a Training College, Malappuram

1. To find out the effectiveness of concept attainment model of teaching
2. To find out the effectiveness of behaviourist model of teaching
3. To compare the effectiveness of concept attainment model of teaching and behaviorist model of teaching.

HYPOTHESES

1. There is no significant difference in the achievement of students in concept attainment model and behaviourist model of teaching.
2. There is no significant difference in the achievement of boys and girls in concept attainment model of teaching
3. There is no significant difference in the achievement of boys and girls in behaviourist model of teaching.
4. There is no significant difference in the achievement of boys in concept attainment model and behaviourist model of teaching.
5. There is no significant difference in achievement of girls in concept attain model and behaviourist model of tea

METHODOLOGY

SAMPLE

The investigator selected 70 samples standard VIII students of V.M.H.M.S Anayamkunnu. These 70 students were di into two groups, control group and experi tal group, each with 35 students.

TOOLS

Lesson scripts in mathematics based on cept attainment model and behaviourist mo

Achievement test in Mathematics.

STATISTICAL TECHNIQUES

Arithmetic Mean, Standard Deviation and t

ANALYSIS AND INTERPRETATION OF DATA

Table 1

Comparison of achievement of students on concept attainment model and behaviourist model

Group	No. of Students	Mean	S.D	t	Result
Concept Attainment Model	35	4.8	2.70	3.93	Significant
Behaviouist Model	35	2.74	1.52		

The table 1 shows that the obtained critical value 3.93 is significant at 0.01 level there is significant difference in the achievement of students in concept attainment model behaviourist model.

Table 2

Comparison of achievement of boys and girls in concept attainment model of teaching.

Concept Attainment Model	No. of Students	Mean	S.D	t	Result
Boys	13-	4 07	2.74	1.32	Not Significant
Girls	22	5.1	2.38		

The table 2 shows that the obtained t value 1.32 is not significant at 0.05 level. So there is no significant difference in the achievement of boys and girls in concept attainment model of teaching.

Table 3

Comparison of the achievement of boys and girls in behaviourist model of teaching.

Behaviourist model	No. of Students	Mean	S.D	t	Result
Girls	19	2.56	1.34	0.08	Not Significant
Boys	16	2.5	0.62		

The table 3 shows that the obtained critical value 0.08 is not significant at 0.05 level. So there is no significant difference in the achievement of boys and girls in behaviorist model of teaching.

Table 4

Comparison of the achievement of boys in concept attainment model and behaviourist model of teaching..

Group	No. of Boys	Mean	S.D	t	Result
Concept Attainment Model	13	4.07	2.74	2.59	Significant
Behaviourist Model	19	2.53	0.62		

The table 4 shows that the obtained critical ratio 2.59 is significant at 0.05 level. So there is significant difference in the achievement of boys in concept attainment model and behaviourist model of teaching.

Table 5

Comparison of the achievement of girls in concept attainment model and behaviourist model of teaching.

Group	No. of Girls	Mean	S.D	t	Result
Concept Attainment Model	22	5.18	2.38	3.93	Significant
Behaviourist Model	16	2.56	1.73		

The table 5 shows that the obtained critical ratio 3.93 is significant at 0.05 level. Hence there is significant difference in the achievement of girls in concept attainment model and behaviourist model of teaching.

FINDINGS

a) There is significant difference in the achievement of students in concept attainment model and behaviourist model and it is interpreted that concept attainment model of teaching is more effective than behaviourist model of teaching.

b) There is no significant difference in the achievement of boys and girls in concept attainment model of teaching and it is interpreted that sex has no effect on the achievement of the students in concept attainment model of teaching.

c) There is no significant difference in the achievementof boys and girls in behaviorist model of teaching and it is interpreted that sex has no effect on the achievement of the students in behaviourist model of teaching.

d) There is significant difference in the achievement of boys in concept attainment model and behaviourist model and it is interpreted that concept attainment model of teaching is more effective than behaviourist model of teaching in the achievement of boys.

e) There is significant difference in achievement of girls in concept attainment model and behaviourist model and it is interpreted that concept attainment model of teaching is more effective than behaviourist model of teaching in the achievement of girls.

CONCLUSION

From the study, it is obvious that the concept attainment model has vital role in real classroom teaching. This model helps the learners in forming their own ideas and fulfillment of contextualization in learning. Through this method teacher can infuse confidence among the learners. The study revealed that the concept attainment model is more effective than behaviourist model of teaching in the achievement of students in mathematics.

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nvksdcollege@rediffmail.com
NVKSD College of Education, Attingal

APPLICATION OF BRAIN-BASED LEARNING IN TEACHING-LEARNING PERCEPTIONS OF HIGHER SECONDARY SCHOOL TEACHERS

* Dr. Geetha Janet Vitus
** Ms. Anu Mukund

ABSTRACT

Adolescence is the time of stress and strain and learning is mostly affected due to the lack of concentration, shyness, etc. If the adolescents are made busy with worthwhile activities which cater enough encouragement, then learning becomes interesting and effective. The working of the brain has a significant impact on the kinds of learning activities employed. Brain-based learning activities enrich the brain with cognitive, affective and psychomotor experiences. The present study reveals that majority of the higher secondary school teachers do not have the right perception, thorough knowledge and awareness of Brain-based Learning and hence they are not employing it in their teaching and learning, which would have helped them better in managing the adolescents in their studies. The study also showed that the gender and subject of teaching did not influence higher secondary school teachers significantly with regard to their perception and level of awareness on the application of Brain-based Learning in teaching and learning.

Keywords: Brain-based Learning, Adolescents, Teaching-Learning

WHAT IS BRAIN-BASED LEARNING

BBL is based on the structure and func... of the brain (Hart 1983). As long as the bra... not prohibited from fulfilling its norm... processes, learning will occur. Repeated ... strengthens brain connections, enabl... experiential learning. If connections are not u... they are pruned away. The brain grows itself ... whatever environment it experienc... Experiences that strengthen connections ... frequent, regular, and predictable. They occu... the context of a warm, supportive relations... which are associated with positive emotion (... excitement, humour, comfort). Our bra... functions as an extremely powerful processor ... the traditional schooling, often inhibits learn... by discouraging, ignoring, or punishing ... brain's natural learning processes.

Brain-based learning has been called ... combination of brain science and common sen... Hart (1983) called the brain "the organ ... learning" and advocated to learn more about t... brain in order to design effective learn... environments. The twelve principles that ap... what we know about the function of the brain ... teaching and learning were derived from ... exploration of many disciplines and are view... as a framework for thinking about teach...

*Hon. Director, Centre for Learning Disabilities and Difficulties (CLDD) Department of Education, University of Kerala
** Junior Research Fellow, Department of Education, University of Kerala.

methodology (Caine and Caine, 1991) The principles are:

1. The brain is a complex adaptive system.
2. The brain is a social brain.
3. The search for meaning is innate.
4. The search for meaning occurs through patterning.
5. Emotions are critical to patterning.
6. Every brain simultaneously perceives and creates parts and wholes.
7. Learning involves both focused attention and peripheral attention.
8. Learning always involves conscious and unconscious processes.
9. We have at least two ways of organizing memory.
10. Learning is developmental.
11. Complex learning is enhanced by challenge and inhibited by threat.
12. Every brain is uniquely organized.

For complex learning to occur, three conditions have been identified:

1. *Relaxed alertness* - a low threat, high challenge state of mind
2. *Orchestrated immersion* - a multiple, complex, authentic experience
3. *Active processing* - making meaning through experience processing

Also, BBL employs activities that (i) provide *learning in rich environment* with activities like Mix-Freeze-Group, Creating Mind Maps; (2) *connect learning to previous knowledge* by making use of activities like Role Plays, Video Clips, Demonstrations, Four Corners, K-W-Ls (know-want-learn), Brainstorming, etc.; (3) enable *learning through social interaction* by making use of activities such as Fan-n-Pick, Match-Mine, Team Interview, Inside-Outside Circle, etc.; and (4) *embed learning* by making use of activities like actual production of articles for magazine, newspaper, etc.

RATIONALE FOR THE STUDY

The exciting learning about brain function and its effects on learning have the potential to revolutionize teaching and learning. Brain research has provided new knowledge about the many ways that humans learn. Systematic implementation of brain-based strategies that emphasize emotion, thematic instruction, differentiated learning, movement are in use. Changing conceptions of memory, assessment, the learning environment, the biology of the brain, and uses of time have all served to improve student achievement. The never-ending search for better teaching practices in this area has led educators to the works of key authors such as Caine, Caine, McClintic, and Klimek (2005), Erlauer (2003), Jensen (2005), Slavkin (2004), Wagmeister and Shifrin (2000), and Wolfe (2001).

BBL can help teenagers especially the higher secondary school students overcome their difficulties with maintaining attention, short-term memory, processing speed, planning, sequencing, and self-monitoring. Teachers should make use of information of neuroscience on brain and how the brain learns to organize their teaching, especially for the adolescents. Hence the investigators felt the need for a study like the perception and awareness of Higher Secondary School Teachers (HSSTs) on the applications of BBL in teaching and learning of higher secondary school students.

HYPOTHESES

1. There is no significant difference in the perception of HSSTs regarding the application of BBL in teaching and learning.

2. There is no significant difference in the level of awareness of HSSTs on application of BBL activities in teaching and learning.
3. There is no significant difference between HSSTs in their perception and level of awareness on the application of BBL activities in teaching and learning in terms of their gender and subject of teaching.
4. There is no significant difference between HSSTs of above and below 35 years of age with regard to their perception and level of awareness on application of BBL activities in teaching and learning.

OBJECTIVES

1. To find out the perceptions of Higher Secondary School Teachers (HSSTs) regarding the application of BBL in teaching and learning.
2. To find out the level of awareness of HSSTs on applications of BBL activities in teaching and learning.
3. To find out the difference between HSSTs with regard to their perception and level of awareness on the application of BBL activities in teaching and learning in terms of their *gender, subject of teaching*, and *age*.

METHODOLOGY

SAMPLE

100 HSSTs
(Random sampling technique)

METHOD

Normative Survey Method

TOOL

Perception Scale

STATISTICAL TECHNIQUES

Percentage and t-test

FINDINGS

Finding No. 1 : Analysis of the data showed that only a small per cent of HSSTs had the right perception about the application of BBL in teaching and learning with 36% coming under the positive category. 43% of HSSTs fell under the neutral category, and 21% fell under the negative category as in table 1.

Table 1

No. of HSSTs out of 100	Mean Score	%	Perception of BBL
43	61.56	43	Neutral
36	80.65	36	Positive
21	56.67	21	Negative

Finding No. 2: The data analyzed revealed that majority of HSSTs showed low awareness on the application of BBL in teaching and learning with 64% coming under the low awareness category. 24% of HSSTs fell under the average awareness category, and 12% fell under the high awareness category, as in Table 2.

Table 2

No. of HSSTs out of 100	Mean Score	%	Awareness of BBL
12	19.75	12	High
24	12.25	24	Average
64	7.33	64	Low

Finding No. 3: The analysis showed that there is no significant difference between male and female HSSTs with regard to their perception and level of awareness on the application of BBL in teaching and learning as the t-value of 1.93 obtained is not significant at 0.05 level, as indicated in table 3.

Table 3

Group	N	Mean	SD	Mean Difference	t-value	Remarks
Male	50	21.72	5.4	1.78	1.93	NS
Female	50	19.94	6.9			

Finding No. 4: When the fourth hypothesis was tested, the result showed that there is no significant difference between arts and science HSSTs with regard to their perception and level of awareness on the application of BBL in teaching and learning as the t-value of 0.37 obtained is not significant at 0.05 level, shown in table 4.

Table 4

Group	N	Mean	SD	Mean Difference	t-value	Remarks
Arts	50	19.6	7.4	2.2	0.37	NS
Science	50	21.8	7.6			

Finding No. 5: The analysis of the fifth hypothesis showed that there is significant difference between HSSTs of above and below 35 years of age with regard to their perception and level of awareness on application of BBL in teaching and learning with the t-value of 2.23 which is significant at 0.05 level. It indicated that the HSSTs above 35 years of age were found to have positive perception and high awareness than those below 35 years of age, as shown in table 5.

Table 5

Group	N	Mean	SD	Mean Difference	t-value	Remarks
35+	50	21.72	6.2	2.88	2.23	Significant at 0.05 level
35–	50	18.54	6.4			

DISCUSSION

The robust research on BBL over the past years shows that students in their adolescents can be helped! The present study reveals that majority of the HSSTs do not have the right perception, thorough knowledge and awareness of BBL activities and hence they are not employing it in their teaching and learning, which would have helped them in managing the adolescents with their studies. The study indicated that the HSSTs below 35 years of age were found to have positive perception and high awareness than those above 35 years of age on the application of BBL in teaching and learning. The study also showed that the gender and subject of teaching did not influence HSSTs significantly with regard to their perception and level of awareness on application of BBL in teaching and learning.

Teachers who want to update, refresh, and rejuvenate their teaching should apply mind/brain learning activities as stated by Caine (2005). These can become the basis of teaching and learning at the highest quality levels, especially for the adolescents. It is critical that the teacher should plan teaching with the brain in mind and keep the focus on basic principles that support

the brain's natural learning tendencies. Create BBL activities to suit the learners, provide structure, but in an environment that represents the nature of learners and their individual needs and experiences. Teachers should not always teach solely on the basis of the biology of the brain, but to ignore what one knows about the brain would be irresponsible. Dismissing it as faddish, premature, or opportunistic is not only short-sighted, but also dangerous to our students, especially, to the sprouting adults.

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N.V.K.S.D College of Education, Attoor
nvksdcollege@rediffmail.com

DESIGNING AND DEVELOPING AN INSTRUMENT FOR IDENTIFYING JOB STRESSORS AMONG TEACHERS WORKING IN MIDDLE AND HIGH SCHOOLS

* Mrs. R.Portia

ABSTRACT

Human beings from birth to death seem to experience stress in life in one form or another. Every individual is vested with responsibilities to be discharged in different life situations occurring at different phases of life. Teachers are not an exception to stress, while discharging their duties as a teacher. By observation and from interaction with teachers of different cadres, the researcher has noted that the teachers at middle school and high school have to face different stress causing circumstances while taking up the work with all sincerity. On this understanding the investigator perused the literature on stress faced by the teachers and identified three major categories causing stress: i. Playing Different Roles, ii. Status Maintenance, iii. Maintaining Interpersonal Relationship. The researcher also identified the sub categories for each one of these three major categories. Then for each sub category the investigator prepared a set of statements for which the respondents have to give the response as ALWAYS, OFTEN, SOMETIMES, RARELY, and NEVER. Altogether 60 statements were prepared to form the Draft Tool. Following this Content validity, Item validity, Construct validity and Factorial validity have been established. After the process of validation, 50 items emerged as the valid ones to form the FINAL FORM of the tool for which the reliability has also been established.

Stress is considered to be a necessary evil because people often work more efficiently with much involvement when they experience the stress at an optimum level. However too much of stress is harmful and makes the individual less productive. Therefore a study of the intensity of stress being experienced by the individuals is much warranted in the present job scenario where people holding different tasks or responsibilities are found to spoil their physical, mental and emotional well - being due to uncontrolled stressful situations. This sort of mental tension and psychological reactions may lead to illness of different sorts such as exhaustion, loss of appetite, headache, sleeplessness, over sleeping, etc., The researcher being a teacher educator is aware of the stressful life situations of teachers and as such has developed an inquisition to identify the stressors that cause damage to their peace and happiness while discharging their responsibilities.

It is the observation of the researcher that teachers in secondary and lower secondary classes are more affected by adverse stress conditions than their counterparts teaching higher classes. The reason for such a phenomenal difference may be attributed to the prevalence of often changing teaching situations as well as the interference of supervising and higher authorities. Therefore the

* Research Scholar, Department of Education, Manonmaniam Sundaranar University, Tirunelveli

researcher has been drawn to the task of identifying the varied stressful situations which turn out to be the stressors for teachers teaching at middle school and high school classes.

With the intention of picking out a valid research tool the researcher has gone through the available ones in the market. The tools such as those developed by Holmes and Rahe (2000), Lovibond (1995), Caplan (1975) and Fahu and Gole (2008) are found to be not suitable for the present population found in Tamilnadu shouldering certain unique responsibilities and facing unique job situations inside and outside the working spot. Therefore the researcher planned to prepare a valid instrument suitable for the chosen target population. The task of identifying the stressors of middle school and high school teachers is possible through a valid tool incorporating all the job and life situations of these teachers. It must be an inventory with appropriate dimensions for the target group.

DEVELOPING THE RESEARCH TOOL

The researcher perused the literature on stress and stress management especially dealing with teachers and from this the researcher noted down three major areas causing stress to teachers of different categories. They are

I. **PLAYING DIFFERENT ROLES:** KERLINGER. F.N (1970), HOGAN.R. (1973).

II. **STATUS MAINTENANCE:** WRAGG.E.C (1974), ZIMMER.MAN.R.E.et.al(1971).

III. **MAINTAINING INTERPERSONAL RELATION SHIP:** HERBERT.G.W (1974), NASH.R. (1973).

On further probing of literature the researcher has identified the following sub categories for each major category of causing stress.

1. **PLAYING DIFFERENT ROLES :**

a) As A MENTOR - SELIGMAN.C.et.al (1996), POOLE.M. (1995), CAMPBELL. R.J.et.al (2003)

b) As AN ADMINISTRATOR - RIVKIN.S. Get.al (2005), MEHRENS.W.A.et.al (1989), MISRA.R. (2000).

c) As A MORAL PRACTIONER - THOMP... A.G (1992), WILSON V.J. (1986), JOSE... CALLAHAN (1977).

d) AS A STORE HOUSE OF KNOWLE... KRATHWOHL.D.R.et.al (1964), FASHE... (1982), ROCK OFF JONAH.E. (2004).

e) AS AN EXPERT IN TECHNIQUES ... TEACHING - WILLIAM L. SANDERS ... (1996), GOLDHABER.D.D.et.al (19... BRIEF.A.P.et.al (2002).

2. **STATUS MAINTENANCE :**

a) AS A ROLE MODEL TO YOUN... GENERATION - BROWN JAMES.C. (20... JEYARAMANNA.K.2001), ORPHANOS... 2008),

b) AS A GUIDE AND COUNSELLO... TAYLOR.J.A (1958), CARMEN PO... MUOZ.et.Al (2000), BARBE... VANDERHELM.et.al (2006).

c) As A PROFESSIONAL - MANDLER.G... (1952), HOROWITZ.F.et.al (1965), AB... CYNTHIA.A. (1993).

d) AS A LEADER - SIEBER.JE (19... LEKARCZYK.D.T.et.al (1969), HAMIL... LEROY.Jr. (2007)

e) AS A PERSON OF SOCIAL AND ETHI... VALUES - PROCTOR.R. 1991), LEE.M.... (1995), OSHAG BEMITITUS. (1998).

f) AS AN IMPORTANT MEMBER ... COMMUNITY - MATHEW JOE.D.M (20... REDDY.I.V.R. (2001), AGGARA WA... (2003).

3. **MAINTAINING INTERPERSON... RELATIONSHIP :**

a) WITH PARENTS - AGGARWAL.J.C (19... KAKKAR.S.B.(1995), DIGUM... BHASKARA RAO.et.al (2004).

b) WITH COLLEAGUES - MURTHY S.K (1985), RAJENDRA PRASAD.D (1994), BLACK VICTOR.R. (2007).

c) WITH ADMINISTRATORS- MUNN (1975), THOMAS.B (2002), SHORE.R. (1995).

d) WITH OFFICIALS - MISHRA.R.C. (2007), TAYLOR.D. L.et.al (1995), SILVESTINE.J (2004).

PREPARATION OF ITEMS

After choosing the sub-categories for the major categories the researcher prepared statements to be included as test items in the proposed inventory. The following table gives the number of items prepared for each sub category to be answered by the subjects on a five point scale as ALWAYS; OFTEN; SOMETIMES, RARELY, AND NEVER.

S.NO	MAJOR CATEGORY	SUB CATEGORY	NO. OF ITEMS
1	PLAYING DIFFERENT ROLES	I. As a Mentor	6
		I. As an Administrator	6
		I. As a Moral Practitioner	3
		I. As a Store House of knowledge	4
		I. As an Expert in Techniques of Teaching	3
		TOTAL	22
2	STATUS MAINTENANCE	I. As a Role Model to Younger Generation	3
		I. As a Guide and Counsellor	6
		I. As a Professional	3
		I. As a Leader	4
		I. As a Person of Social and Ethical Values	3
		I. As an important Member of Community	3
		TOTAL	22
3	MAINTAINING INTERPERSONAL RELATIONSHIP	I. With Parents	3
		I. With Colleges	4
		I. With Administrators	4
		I. With Officials	5
		TOTAL	16
		GRAND TOTAL	60

Pilot Study I

A pilot study was undertaken for validating the tool.

PHASE I: CONTENT VALIDITY

The process of validation starts with phase I. Copies of the draft tool were provided to the research guide and two other experts guiding doctoral studies in Education in other universities with a request to study the appropriateness of the statements prepared and offer suggestions for better alterations or modifications. The following are the changes incorporated in the Draft Tool based on the suggestions of the experts.

I. The first major category has been worded as "Teacher Role Maintenance".

II. The statements in the sub category of the first major category have been clubbed together to form three sub categories a. Trend Executive, b. Professional,c. Moral Ethical Practitioner.

R18	Book Bank Register For
R19	Book Bank Issue
R20	Book Bank

III. The second major category has been worded as "Respect and Honour Maintenance".

IV. The statements in the six sub categories of the second major category have been regrouped under three sub categories a. in Teaching, b. in Guiding and Leading, c. in Outside School Context

V. The statements in the four sub categories of the third major category have been regrouped under three sub categories a. with Colleagues, b. with Authorities, c. with Parents of the students.

As the draft tool has been recast on the experts' suggestions it may be stated that the prepared tool has got content validity.

PHASE II: ITEM FITNESS

To establish the statistical validity of the modified draft tool was administered to 300 teachers working in middle and high schools. After scoring responses of the respondents, the fitness of each item has been established by subjecting the data to Goodness of Fit Test, which is otherwise called CHI SQUARE ONE SAMPLE TEST. It is one of the several applications of chi square test (Cohen Louis 1976). Here it is used to test the null hypothesis formed for every statement in the draft tool that the responses obtained under ALWAYS, OFTEN, SOMETIMES, RARELY, and NEVER are equal by choice.

GOODNESS OF FIT VALUE

Item No.	Goodness Fit Value	Table Value at 5% Level	Remark	Item No.	Goodness Fit Value	Table Value at 5% Level	Remark
1	63.7	9.49	Retained	31	70	9.49	Retained
2	3.4	9.49	Rejected*	32	4	9.49	Rejected*
3	79.6	9.49	Retained	33	73.9	9.49	Retained
4	76.6	9.49	Retained	34	114.4	9.49	Retained
5	3.4	9.49	Retained	35	75.2	9.49	Retained
6	76.6	9.49	Retained	36	58.35	9.49	Retained
7	76.7	9.49	Retained	37	38.9	9.49	Retained
8	82.4	9.49	Retained	38	22.7	9.49	Retained
9	126.75	9.49	Retained	39	126.75	9.49	Retained
10	3.4	9.49	Rejected*	40	51.2	9.49	Retained
11	8.8	9.49	Retained	41	211.3	9.49	Retained
12	26.2	9.49	Retained	42	169.9	9.49	Retained
13	8.2	9.49	Retained	43	142	9.49	Retained
14	3.4	9.49	Rejected*	44	120.5	9.49	Retained
15	4.1	9.49	Retained	45	71.5	9.49	Retained
16	29.4	9.49	Retained	46	158.3	9.49	Retained
17	85	9.49	Retained	47	4.1	9.49	Rejected*
18	105.4	9.49	Retained	48	82.8	9.49	Retained
19	76.55	9.49	Retained	49	95.85	9.49	Retained
20	25.1	9.49	Retained	50	179	9.49	Retained
21	137.5	9.49	Retained	51	51.8	9.49	Retained
22	70	9.49	Retained	52	13.4	9.49	Retained
23	134.8	9.49	Retained	53	51.5	9.49	Retained
24	123.28	9.49	Retained	54	13.7	9.49	Retained
25	76.5	9.49	Retained	55	33.35	9.49	Retained
26	33.7	9.49	Retained	56	5	9.49	Rejected*
27	3	9.49	Rejected*	57	66.2	9.49	Retained
28	59.35	9.49	Retained	58	42.3	9.49	Retained
29	83.5	9.49	Retained	59	36.1	9.49	Retained
30	180.9	9.49	Retained	60	3.4	9.49	Rejected*

REJECTED

The above given table furnishes the Goodness of Fit value for each one of the 60 items and also the details about the items retained for the final form of the tool and the items rejected. Out of 60 statements 8 have been deleted by Goodness of Fit Test.

PHASE III: CONSTRUCT VALIDITY

Using the tabulated data, the item total correlation was computed for each item to establish the construct validity of the newly formed tool. The table given below reveals the item total correlation for all the 52 items.

ITEM – TOTAL CORRELATION

Item No	r Value	Item No	r Value	Item No	r Value	Item No	r Value
1	0.206	14	0.406	27	0.822	40	0.234
2	0.595	15	0.764	28	0.547	41	0.326
3	0.803	16	0.734	29	0.505	42	0.531
4	0.759	17	0.624	30	0.082*	43	0.341
5	0.722	18	0.201	31	0.721	44	0.264
6	0.751	19	0.585	32	0.631	45	0.026*
7	0.75	20	0.484	33	0.637	46	0.834
8	0.216	21	0.342	34	0.345	47	0.298
9	0.704	22	0.473	35	0.394	48	0.692
10	0.663	23	0.873	36	0.527	49	0.683
11	0.771	24	0.653	37	0.81	50	0.344
12	0.644	25	0.481	38	0.818	51	0.722
13	0.724	26	0.781	39	0.857	52	0.492

** indicates the items deleted*

From the table it may be seen that two of the items showing insignificant correlation are deleted, thus making the final form of the tool with only 50 items.

PHASE IV – FACTORIAL VALIDITY

Finally the researcher has decided to make the process of validation complete by factor analysis. The partially validated draft tool was again administered to 300 subjects chosen by random from 10 districts randomly taken from Tamilnadu. The tabulated data were used for factor analysis.

The process of factor analysis started with the extraction of communality values for all the 50 items furnished in table given below. It may be observed that all the 50 items have recorded more than 0.7, proving their suitability for inclusion.

EXTRACTED COMMUNALITY VALUE

Item No	Initial	Extraction	Item No	Initial	Extraction	Item No	Initial	Extraction
1	1	0.857	18	1	0.872	35	1	0.934
2	1	0.922	19	1	0.88	36	1	0.907
3	1	0.915	20	1	0.75	37	1	0.906
4	1	0.928	21	1	0.861	38	1	0.895
5	1	0.864	22	1	0.897	39	1	0.929
6	1	0.825	23	1	0.834	40	1	0.951
7	1	0.882	24	1	0.903	41	1	0.916
8	1	0.891	25	1	0.88	42	1	0.909
9	1	0.882	26	1	0.931	43	1	0.895
10	1	0.914	27	1	0.904	44	1	0.833
11	1	0.892	28	1	0.927	45	1	0.837
12	1	0.816	29	1	0.852	46	1	0.957
13	1	0.874	30	1	0.93	47	1	0.882
14	1	0.912	31	1	0.897	48	1	0.855
15	1	0.928	32	1	0.872	49	1	0.936
16	1	0.771	33	1	0.848	50	1	0.806
17	1	0.848	34	1	0.919			

The further analysis to explain the total variance of each component by initial Eigen values shows that the first 11 components explain a variance ranging from 2.021 to 37.624. Moreover extraction sums of squared loadings also explain that the first 11 components account for 88.22% of the composite score value. The contribution of all the 15 remaining components seems to be so negligible and insignificant that they are not to be considered as contributo factors. Therefore for these 11 components wh are to be treated as factors, the contribution each item has been computed by Princip Component Analysis using Varimax with Kais Normalization generating Component Matr and Rotated Component Matrix.

Thus using the matrices the items have be reorganized under the emerging 11 factors on t basis of their factor loadings. The following tab gives the details of the items grouped under th factors.

ITEM DISTRIBUTION UNDER 11 FACTORS

S.No	Components										
	1	2	3	4	5	6	7	8	9	10	11
1	3	2	14	10	1	4	16	50	42	43	39
2	5	9	21	11	8	41					
3	6	12	22	29	17						
4	7	18	23	30	34						
5	13	19	25	32	45						
6	15	20	26	35	48						
7	49	24	31	36							
8		27	33	37							
9		28	38								
10			40								
11			44								
12			46								
13			47								
14											
15											

The table shows that the first five factors have sufficient number of items of identical nature. The perusal of items under the factors six, seven, eight, nine, ten, and eleven reveals that the items under these respective factors have some similarity with regard to stress causing situation that refers to the movement of the teacher with government officials, management authorities and parents of the students. Therefore all these items have been brought under one factor which is numerically marked as six. Now altogether 6 factors have been identified as significant components of the newly formed tool, which are to be referred as the dimensions of the job stressors of the middle and high school teachers. The six factors are thus termed as

Factor 1 – WORK LOAD
Factor 2 - CHANGING TEACHING PROCESS
Factor 3 - BEYOND TEACHING ROLE
Factor 4 - EXPRESSION OF INDIVIDUALITY
Factor 5 – NON ACADEMIC DEPLOYMENT
Factor 6 – INTERFERENCE OF OFFICIALS AND OTHERS

Thus the factorial validity of the tool has been established.

Pilot Study II: RELIABILITY

The reliability coefficient of the tool has been established by test and retest method. The computed reliability coefficient 0.87 shows that the tool is highly reliable.

Pilot Study III: ESTABLISHING NORMS

The final form of the tool consisting of 50 items was administered to 1200 respondents chosen randomly from 15 districts in Tamilnadu representing all the 32 districts. Using the normal probability the grade norms have been established.

FINAL FORM OF THE TOOL
TEACHERS' JOB STRESSOR INVENTORY

Here below 50 statements are given. Read each statement carefully and judge its suitability to you and show your response by ticking off (✓) under any one of the five responses as given below:

(a) Always suitable to me; (b) Often suitable to me; (c) Sometimes suitable to me;
(d) Rarely suitable to me; (e) Never suitable to me.

Statements	(a)	(b)	(c)	(d)	(e)
1. As I am engaged in office work by the school authorities, I am worried about its negative impact on my teaching					
2. Though I am trained in modern methods of teaching, I feel depressed as I cannot practice them in the class.					
3. I lose interest in job as I have to create new registers while following new methods of teaching.					
4. The visits of experts to monitor our classroom teaching affect me much though the adoption of modern methods is good for students.					
5. While following modern methods of teaching, I have to make use of new records and new assessment techniques. It disturbs me much.					
6. Since the co-workers hesitate to cooperate, in spite of training in modern methods of teaching, I feel a little more burdened.					
7. As my colleagues pester me for the preparation of their registers, assessment cards etc, I suffer without rest.					
8. In addition to teaching, as I am inducted into official duties, I find a setback in my job.					
9. While following what the government instructs in teaching, the traditional classroom climate and teacher-student relationship get changed, causing worry to me.					
10. I develop hatred towards teaching because I am forced to teach in a particular way without exhibiting my innate capacities.					
11. Though I am an acknowledged expert in teaching, the pouring advice of the higher authorities saddens my heart.					
12. My heartbeat loses its rhythm as I am constantly observed by others in the class in the name of innovation in teaching for which I am being trained.					
13. Teaching has become a burdensome task as I concentrate on each individual in all classes even with large number of students.					

Statements	(a)	(b)	(c)	(d)	(e)
14. I feel perturbed while meeting the students and their parents in school functions, as I am deficient in public speaking skills.					
15. As I have to keep, the students'registers, cumulative records etc safe for teachers' verification, I am worried and depressed.					
16. I pretend as if I am very submissive to government officials when they come for inspecting my school.					
17. As some of the individuals, not connected with our school are interfering in the teaching-learning activities, I feel tensed.					
18. Several in-service programmes are offered to teachers in an academic year. Therefore teachers feel troubled as they fail to show greater involvement in teaching.					
19. During in-service programmes, classes are clubbed together or classes go without teachers, affecting the learning of the students. It has become a cause of worry to me.					
20. What all introduced in the name of innovation are a source of problem to teachers.					
21. Since I care much about the conduct of students, I get into problems that cause headache to me.					
22. I want to be an educationist of good conduct and character. However, I feel sad about my minor mistakes which spoil my full involvement in teaching.					
23. As I am a teacher of upright conduct, I feel much confused and affected by the indiscipline in students.					
24. As I am incapable of offering education with discipline, following the method and procedures suggested by the government, I am not fully satisfied with my job of teaching.					
25. As authorities only point out the deficiencies in my teaching without appreciating my efforts to uplift the student community, I lose my involvement in teaching.					
26. As I have developed a strained relationship with experts while participating in in-service programmes, I am incapable of rendering my job fully well.					
27. The adoption of innovative approaches do not help the very poor achievers as they do not have the basic knowledge and skills. Therefore, I lose interest in my job.					
28. As the adopted modern techniques of teaching do not seem to motivate and develop the high achievers, I feel dejected.					

Statements	(a)	(b)	(c)	(d)	(e)
29. I am not able to take the teaching job as a challenging one, as I don't find the opportunity to read and collect information and show of my individuality because of the rigorous adoption of the so called innovative methods suggested by the government.					
30. The society expects the teachers to be experts in education. However I feel that my lack of expertise does not allow me to render my job fully well.					
31. I feel that I am not able to shine as a good counsellor, because I am not fully competent to create awareness in students about higher education and opportunities for vocational studies.					
32. Several times, I was refused to act as teacher in-charge of school functions though I willingly came forward to take up such responsibility. Therefore, I avoid participating in such functions.					
33. Teachers who are close to the head or management members are given varied opportunities. Therefore, I don't feel like involving myself fully in students' developmental activities.					
34. While I execute my responsibilities as the leader for a particular programme or assignment, the interference of authorities and my colleagues affects me very much.					
35. Though I am an important member of society, sometimes my old students move with me indifferently. Because of this, my dignity is affected and it tells upon my involvement in teaching.					
36. Though I am an acknowledged teacher, the people with authority and money are given more respect and regard in society, which affects the interest in my profession.					
37. Whenever the media blow up the trivial mistakes of teachers ,I feel highly disturbed as there is nobody to rise up against them to establish teachers' work and individuality.					
38. I feel proud of my job as my neighbours come for getting guidance from me for problems related to studies.					
39. I avoid talking to many of my colleagues, as they do not possess and practice proper behaviour of teachers.					
40. I feel that I am an irritating factor for most of the teachers in my school.					
41. My colleagues pretend as if they are genuinely interested in their visit, whenever government officials visit my school.					
42. At the time of the visit of higher officials, we forget to take our food and the thinking of eating comes only after they have left the school.					

Statements	(a)	(b)	(c)	(d)	(e)
43. I don't give any respect to the management authorities who have failed to provide the required facilities in the school.					
44. I feel disappointed in my job as the teachers who strive for developing leadership qualities in students are neither motivated nor encouraged.					
45. I feel, I am somewhat affected because often my institutional head calls me and compels me to take up works other than teaching.					
46. As I take model classes in the presence of subject experts, my students develop an interest for teaching.					
47. I feel a little worried because of the new approaches in teaching which enable the students to learn independently spoiling the possibility for group study and group living.					
48. I don't feel worried when I could not meet and talk to parents of poor achieving students.					
49. As it is difficult to cope with the interesting demand for quality in teaching, I am getting more and more anxious about the job.					
50. I don't move with the parents freely, as they don't consider me as a good teacher.					

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