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Editorial

QUALITY EDUCATION FOR KNOWLEDGE SOCIETY

Education is concerned with all-round development of an individual – intellectual, physical, social, moral and aesthetic. A good system of education should be able to satisfy the insatiable hunger of the new generation learners for knowledge. Educational institutions need to evolve a curriculum that is sensitive to the social and technological needs of society. According to Dr. A.P.J Abdul Kalam, the education system has a tremendous responsibility to transform a learner into a leader – the transformation from 'what can you do for me' to 'what can I do for you?'.

The technological rise of the 21st century and widespread integration of these technologies into our society has brought about a drastic change in the entire system of education. Our education must be quality-oriented to meet the needs of the global society. In this era of science and technology, the entire education system has to be based on capacity building comprising five components: research and enquiry, creativity and innovation, capacity to use high-end technology, entrepreneurship and moral leadership.

The research papers and articles in this issue focus on the topics such as concept mastery, reflective learning, critical thinking ability, edutainment programme, experiential learning, eco-friendlines and other such realms of knowledge. It is hoped that these contributions would throw light on the readers to enrich themselves to revamp the educational system for the development of a quality-based knowledge society.

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Influence of Concept Mastery and Reasoning Ability of Higher Secondary Students on their Mathematical Capacities

* Dr. Asha J.V

ABSTRACT

Quality of performance has become the key factor for personal progress. Managing educational capacities largely depend on how students perform in standardized testing, that are used to measure student achievement. Parents desire that their children climb the ladder of performance as high as possible to a level. This desire for a high level of achievement puts a lot of pressure on students, teachers and schools. In fact, it appears as if the whole system of education revolves round the academic achievement of students, though various other outcomes are also expected from the system.Concepts constitute a large and important segment of the subject matter to be attained by students. Student's reasoning ability is a sin-qua-non to the evaluation of their performance in learning and an indicator of their potential predictors of future performance.Reasoning is fundamental to knowing and doing mathematics. In Mathematics, reasoning can be defined as the organization and employment of those habits of thought that are necessary to make logical deductions and to comprehend the functional relationship. The present study attempted to find out the intricacies of managing mathematical capacities as evidenced through achievement in mathematics of higher secondary students in relation to their concept mastery and reasoning ability. The study revealed the association of achievement in Mathematics with concept mastery and reasoning ability and the implications there of.

INTRODUCTION

Designing innovative ways to teach important concepts in Mathematics to students is an exciting exercise of any Mathematics teacher. Fostering the development of students' critical thinking skills is an important aspect for maintaining a competitive workforce in the technologically advanced global economy, and innovations in instruction is a particularly useful medium for doing so (Sveiby, 1997). Yet the modern reliance on standardized testing in order to measure student achievement so that schools can be held more accountable has long been thought to potentially restrict what and how educators are able to teach in the classroom (Leinwand, 2009). Finding innovative ways to teach students to learn in ways that allow them to think critically in this environment, then, can be especially challenging due to external pressures to ensure high student achievement. Concept mastery thus helps to acquire things through critical thinking.

Concept mastery is generally associated with Mastery learning strategy. Mastery learning is an instructional strategy which presumes that all children can learn if they are provided with certain appropriate learning conditions. Specifically mastery learning is a method whereby students are not advanced to a subsequent learning objective until they demonstrate proficiency with current ones. The concept of mastery learning can be seen in the work of Jesuit schools before the 17th century. Comenius in the 17th century, Pestalozzi in the 18th century,

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Herbert in the 19th century and Washburne (1922), Morrison (1926), Carroll (1863) and Bloom (1974). Bloom is considered as the father of Mastery learning strategy for his systematic investigation into the problem of helping each child to achieve mastery of a subject and for popularizing it. Concepts constitute a large and important segment of the subject matter to be attained by students.

Reasoning plays an important role in the attainment of success in academic field. Reasoning ability is a term that refers to non-verbal, deductive, inductive or analytical thinking. Student's reasoning ability is a sin-qua-non to the evaluation of their performance in learning and an indicator of their potential predictors of future performance. Reasoning is fundamental to knowing and doing mathematics. In Mathematics, reasoning can be defined as the organization and employment of those habits of thought necessary to make logical deductions and to comprehend functional relationship. So acquisition of reasoning skills is central in the intellectual lives of students.

NEED AND SIGNIFICANCE OF THE STUDY

The world is becoming more complete and competitive. Quality of performance has become the key factor for one's personal progress. Parents desire that their children climb the ladder of performance to as high a level as possible. This desire for a high level of achievement puts a lot of pressure on students, teachers and parents. In fact, it appears as if the, whole system of education revolves round the academic achievement of students, though various other outcomes are also expected from the system. Thus, a lot of time and effort of the schools are used for helping students to achieve better in their scholastic endeavours. The importance of scholastic or academic achievement has raised several important questions for educational researchers. What factors promote achievement in students? How far do these different factors contribute towards academic achievement? Many factors have been hypothesized and researched upon. Researchers have come out with varied results, at times complimenting each other, but at times contradicting each other. A complete and comprehensive picture of academic achievement still seems to eluding the researchers. The search therefore, continues and educational researchers all over the world are still seeking a breakthrough in elucidating this phenomenon.

Mathematics is one the most important subjects which has wide applications in one way or other in daily life and achievement in general is considered as a key criterion to judge one's key potentials. Many researchers (Mevarech, 1985; Slavin and Karweit, 1984; & Fisher 1998) are of the view that concept mastery and reasoning ability are the two important determinants of achievement in any subject. As mathematics is one of the most important subjects for the higher secondary students aspiring for engineering and allied courses, the researcher is keen to look into the intricacies of achievement in mathematics in relation to the concept mastery and reasoning ability of students.

OBJECTIVES

The objectives of the study are given below:

1. To analyse the achievement in Mathematics of higher secondary Science and Commerce stream students.
2. To find out the concept mastery of Science/ Commerce stream students in the basic concepts related to trigonometry, calculus and quadratic equations.
3. To find out the reasoning ability of higher secondary students in the Science and Commerce streams
4. To determine the relationship between the concept mastery and the achievement in Mathematics of the higher secondary students in the Science and Commerce streams.
5. To determine the relationship between reasoning ability and the achievement in Mathematics of the higher secondary students in the Science and Commerce streams.

HYPOTHESES

1. There is significant difference in the concept mastery among the higher secondary Science/

Commerce stream students in the basic concepts related to trigonometry, calculus and quadratic equations.

2. There is significant difference in the reasoning ability of Higher secondary Science/Commerce stream students.

3. There is significant correlation between concept mastery and the achievement in Mathematics of higher secondary Science/Commerce stream students.

4. There is significant relationship between reasoning ability and the achievement in Mathematics of higher secondary Science/Commerce stream students.

METHODOLOGY IN BRIEF

METHOD

For the present study normative survey method is adopted.

SAMPLE

The sample selected for the study consists of 441 Higher Secondary Students drawn from 4 schools in Trivandrum district of Kerala. The investigator adopted simple random sampling techniques.

TOOL USED

The study used the following tools for measuring relevant variables viz., concept mastery and reasoning ability:

1. Formative Test in Mathematics selecting three areas viz., trigonometry, calculus and quadratic equations. (MCQs prepared and standardized by the investigator based on National level competitive tests measuring concept mastery like the NTSE, KVPY etc.)

2. Reasoning Ability Test (An objective type non verbal test prepared and standardized by the investigator)

STATISTICAL TECHNIQUE USED

The Statistical techniques used for the study were Arithmetic Mean, Standard Deviation, Critical Ratio and Karl Pearson's Correlation Coefficient.

RESULT AND DISCUSSION

1. Achievement of Higher Secondary Students in Mathematics

The objective designed for the purpose is to analyse the Achievement of higher secondary Science/ Commerce stream students with Mathematics. Here the achievement scores were collected from school records for data analysis. The details are given in the table.1

TABLE 1

Description of the scores of Achievement test in Mathematics

Variable	N	range	mean	median	mode	SD
Achievement test scores	441	88-4	32.82	31	27.36	18.33

The maximum mark obtained was 88 and the minimum was 4 out of 100 for Mathematics. The value of range obtained shows that the sample consists of a heterogeneous group. The value of Arithmetic mean for the whole sample is 32.82 and standard deviation 18.33. This shows that the achievement of students in Mathematics is below average (if the minimum pass marks for the subject is 35). On the basis of median score (median=31) the whole sample is divide into two, that is the score above the median value is treated as high achievement and below, it is treated as low achievement.

Concept Mastery in Mathematics of Higher Secondary Students

The objective set up in this section was to find out Concept Mastery in Mathematics of Higher Secondary Schools Students. As the measurement of concept mastery in Mathematics, the scores of formative test on concept mastery in Mathematics of students was taken. Range, mean, median, mode and standard deviation were also calculated. The maximum marks obtained was 37 and minimum was 6 out of 60 for concept mastery in Mathematics. The value of range obtained shows that sample consists of a heterogeneous group. The value of Arithmetic mean for the whole sample is 23.95 and standard deviation 5.575. This shows that the students' concept mastery in Mathematics is below average. (The details are given in the Table 2.)

TABLE 2

Description of the scores of Concept Mastery in Mathematics

Variable	N	Range	Mean	Median	Mode	SD
Concept mastery	441	37-6	21.95	22	21	5.575

Comparison of Concept mastery in mathematics of High and Low Achievers

In this section the concept mastery of high and low achievers were separately found out and calculated the arithmetic mean and standard deviation. For comparison significance of difference between the mean values of these samples was found out by calculating the critical ratio. The details are given in table 3.

TABLE 3

Data and result of Test of Significance of the difference between concept mastery scores of high and low achievers

Achievement	N	Mean	SD	t-value	Level of significance
High	180	28.36	4.74	11.62	P<0.01
Low	261	20.12	4.45		

The mean and standard deviation of the concept mastery in Mathematics of high achievers are 28.36 and 4.74 and of low achievers are 20.12 and 4.45 respectively. The difference in the mean was tested for significance. The t-value obtained is11.62 which is greater than the value set of significance at 0.01 level. This shows that there is significant difference between high and low achievers in concept mastery.

Comparison of Concept Mastery in Mathematics of Science and Commerce Stream

The Science and Commerce students were compared on the basis of concept mastery in commerce. The details are given in table 4.

TABLE 4

Data and result of test of significance of the difference between the mean scoresof concept mastery of students (stream wise)

Stream wise	N	Mean	SD	t-value	Level of significance
Science	292	23.84	4.71	1.39	p>0.05
Commerce	149	23.92	6.12		

The mean and standard deviation of the concept mastery scores in mathmatics of Science stream students are 23.84 and 4.71 and that of commerce stream students are 23.91and 6.12 respectively. The difference in the mean was tested for significance. The t-value obtained is 1.39 which is less than the value set for significance, that is 2.58 at 0.01 level and 1.96 at 0.05 level. Therefore, it is inferred that there is no significant difference between the students of Science and Commerce streams in their concept mastery.

REASONING ABILITY OF HIGHER SECONDARY STUDENTS

The Reasoning ability of Higher Secondary Schools Students of the whole sample and comparison of reasoning among sub samples were found out. As the measures of reasoning ability the scores of nonverbal reasoning test was taken. Range, mean, median, mode and standard deviation were calculated. The details are given in Table 5.

TABLE 5

Range, Mean, Median, Mode, Standard Deviation of Reasoning Ability (Whole Sample)

Variable	N	range	mean	median	Mode	SD
Reasoning ability	441	18-2	12.4	12	12	2.88

From table 5, the maximum mark obtained was 18 and minimum was 2 out of 20 for non verbal reasoning test. The value of range obtained shows that sample consists of heterogenous group. The value of Arithmetic mean for the whole sample is 12.4 and standard deviation 2.88. This shows that Science and Commerce students are having average reasoning ability.

Comparison of reasoning ability based on Achievement level and Streamwise

In this section the reasoning ability of high and low achievers of the whole sample and of both the streams were separately found out and the arithmetic mean and standard deviation were calculated. For comparison of significance of difference between the mean values of these sub-samples were found out by calculating the t-value. The details are given in table 6.

TABLE 6

Data and Result of Test of Significance of the difference between reasoning ability scores of sub-samples

Subsamples	N	Mean	SD	t-value	Level of significance
High achievers	187	12.87	2.72	9.93	P<0.01
Low achievers	254	10.06	3.53		
Science Stream	292	11.18	2.37	5.45	P<0.05
Commerce Stream	149	10.34	3.01		

The mean and standard deviation of reasoning ability in mathematics of high achievers are 12.87 and 2.72 and of low achievers are 10.06 and 3.53 respectively. The difference in the mean score was tested for significance. The t-value obtained is 9.93 which is greater than the value set for significance at 0.01 level. The inference is that there is significant difference between high and low achievers in reasoning ability. Likewise, the Science and Commerce students were compared on the basis of Reasoning ability. The mean and standard deviation of reasoning ability of Science stream students are 11.8 and 2.37 and that of commerce students are 10.34 and 3.01 respectively. The difference in the mean was tested for significance and t-value obtained was 5.45 which shows significant difference between the science and commerce students in their reasoning ability.

RELATIONSHIP BETWEEN CONCEPT MASTERY AND ACHIEVEMENT OF WHOLE SAMPLE AND SUB SAMPLE

In this section, the relationship between Concept Mastery and Achievement of Higher Secondary Students based on the whole sample and sub samples. In order to find out the relationship the coefficient of correlation 'r' is calculated and it is tested for significance by calculating the 't' value. Table 7 shows the picture of correlation analysis.

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TABLE 7

Result of Test of Significance of 'r' between Concept Mastery and Achievement (For Whole Sample and sub samples)

Sample	N	r	t-value	Level of significance
Whole	441	0.67	18.39	P<0.01
High achievers	187	0.483	8.31	P<0.01
Low achievers	254	0.475	9.37	P<0.01
Commerce stream	149	0.67	11.89	P<0.01
Science stream	292	0.67	13.76	P<0.01

It is clear from the table 7, the obtained value for 'r' is 0.67 which indicates that there is subsatantial relationship between concept mastery and achievement in mathematics of higher secondary students. Also this relationship is positive, and this shows that any increase or decrease in the scores of concept mastery is correspondingly followed by increase or decrease in the achievement of higher secondary students.

The t-value obtained is 18.39. From the t-table the value of t with df (degrees of freedom) 438 (N-2) at 0.01 level is 2.58 and at 0.05 level is 1.96. Calculated't' value is higher than both values. Hence 'r' is significant at both levels. Thus it can be interpreted that there is significant relationship between Concept Mastery and Achievement in mathematics of higher secondary students.

The obtained 'r' value of high achiever is 0.483. This denotes a moderate relationship between concept mastery and achievement. The t-value is obtained is 8.31. Calculated t-value is higher than the value set for significance. Hence 'r' is significant at 0.01 level it can be interpreted as "there exists a significant relationship between concept mastery and achievement in mathematics of High achievers."

The obtained 'r' value for low achievers is 0.475. This denotes a moderate relationship between concept mastery and achievement in mathematics. The obtained t-value is 9.37. This indicates that 'r' is significant at both levels for low achievers. Thus it can be interpreted as there exists a moderate significant relationship between concept mastery and achievement in mathematics of low achievers.

Similarly, the obtained 'r' value of Humanities is 0.67. This denotes a substantial relationship between concept mastery and achievement. The t-value obtained is 11.89. This calculated t-value is higher than the value set for significance. Hence 'r' is significant. Thus it can be interpreted that 'there exists a significant relationship between concept mastery and achievement in mathematics of science group.'

The obtained 'r' value for commerce students is 0.67. This denotes a substantial relationship between concept mastery and achievement in mathematics. The obtained t-value is 13.76. This indicates that 'r' is significant at both levels for commerce students. Thus, it can be interpreted as 'there exists a substantial significant relationship between concept mastery and achievement in mathematics of the students of Commerce group'.

Thus, the analysis shows significant relationship between concept mastery and achievement in the subject. The higher the concept mastery, the higher will be the achievement. This is true in the case of students of both the streams.

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RELATIONSHIP BETWEEN REASONING ABILITY AND ACHIEVEMENT IN MATHEMATICS OF HIGHER SECONDARY STUDENTS

The relationship between the Reasoning Ability and Achievement in Mathematics of Higher secondary school students. In order to find out the relationship, the coefficient of correlation 'r' is calculated and it is tested for significance by calculating the 't' value. Table 8 shows the clear picture of the analysis. The relationship between Reasoning Ability and Achievement in maths for the sub samples (viz: high and low achievers, Commerce and science stream) was also calculated.

TABLE 8

Result of Test of Significance of 'r' between Reasoning ability and Achievement of the Whole Sample and sub samples

Sample	N	r	t-value	Level of significance
Whole	441	0.22	4.58	P<0.01
High achievers	149	0.24	3.30	P<0.01
Low achievers	292	0.13	2.001	P<0.05
Commerce stream	187	-0.067	-.898	P>0.05
Science stream	254	0.31	5.21	P<0.01

It is clear from Table 8, the obtained value for 'r' is 0.22 which indicates that there is low relationship between reasoning ability and achievement in economics of higher secondary students. Also this relationship is positive, and this shows that any increase or decrease in the scores of reasoning ability is correspondingly followed by increase or decrease in the achievement of higher secondary students.

The t-value obtained is 4.58. From the t-table the value of t with df (degrees of freedom) 438 (N-2) at 0.01 level is 2.58 and at 0.05 level is 1.96. Calculated 't' value is higher than both values. Hence 'r' is significant at both levels. Thus, it can be interpreted that there is significant relationship between Reasoning Ability and Achievement in mathematics of higher secondary students.

CONCLUSION

There is no significant difference in reasoning ability of higher secondary students in the Science and commerce stream.

There is significant relationship between concept mastery and achievement in mathematics of Higher Secondary Students.

For the sub samples

There is moderate significant relationship between concept mastery and achievement in mathematics of high and low achievers. This conclusion is supported by the following findings of the study. The coefficient of correlation between concept mastery and achievement of high and low achievers.

There is substantial significant relationship between concept mastery and achievement in mathematics of higher secondary school students in the science and commerce stream.

There is significant relationship between reasoning ability and achievement in Mathematics of Higher Secondary Students.

For the sub samples, there is negligible significant relationship between concept mastery and

achievement in Mathematics of high and low achievers.

There is no significant relationship between reasoning ability and achievement in mathematics of higher secondary school students in Science stream and there exists a significant relationship in commerce stream.

There is significant relationship between concept mastery and reasoning abilityof Higher Secondary Students.

For the sub samples, there noted slight significant relationship between concept mastery and reasoning ability of high and low achievers. There is no relationship between concept mastery and reasoning ability of higher secondary school students in the Science and low significant relation between concept mastery and reasoning ability of students in commerce stream.

There is significant difference among two variables in case of their achievement scores in mathematics. There is no significant difference in the achievement in mathematics of higher secondary students in the science and commerce streams.

For the whole sample, there is significant relationship between concept mastery and achievement in mathematics of Higher Secondary Students. For the sub samples, there is moderate significant relationship between concept mastery and achievement in mathematics of high and low achievers. Also, there is substantial significant relationship between concept mastery and achievement in mathematics of higher secondary school students in the Science and commerce stream.

The results obtained show that achievement, concept mastery and reasoning ability are closely related. At the present situtation, the level of academic achievement, concept mastery and reasoning ability are drawn to be quite disappointing. For improving the present situation there is a need to plan certain innovative methods for strengthening the intellectual activities of students.

IMPLICATIONS OF THE STUDY

The study reveals the association of achievement in Mathematics with concept mastery and reasoning ability. Since these variables are important from the point of educational practices, the following suggestions are made with a view to improve the present condition.

1. A considerable relation between academic achievement with concept mastery and reasoning ability indicates the special importance to the particular variables. So it must be given priority while designing the curriculum and text books.
2. Adequate training, both in-service and pre service must be given to teachers to enable them to teach Mathematics giving due importance to concept mastery and reasoning ability.
3. Orientation programmes, workshops and seminars based on important concepts in Mathematics will enhance their knowledge in the particular subject. The mastery level in mathematics can be promoted through emphasizing innovative teaching methods.
4. Schools should provide healthy environments for easy transaction of the subject.

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Perception on Inclusive Education among High School Teachers

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ABSTRACT

Inclusive education in India has recently received a momentum. In India generally students without disabilities are sent to regular schools and with disabilities are sent to special schools. At present efforts are being made to make education inclusive in nature. Inclusive education therefore means that all students, regardless of their strength or weaknesses are accommodated in a common school and become part of the same school community. To achieve this vision we need to take into account what the students and teachers feel about such arrangements. The commitment of teachers to inclusivity depends entirely on their perception towards inclusion. Thus teacher's perception toward inclusive education plays a pivotal role in its success. This study hence aimed at establishing the perception of teachers towards inclusion, their commitment to inclusion and the relationship between teachers' perception and their commitment to it. The main objective of the study therefore is perception on inclusive education among high school teachers, with respect to certain demographic variables. Normative Survey method was adopted for this study. The sample included 503 high school teachers selected from Salem, Namakkal, Krishnageri and Dharmapuri Districts of Tamilnadu. The investigator used purposive sampling technique for selecting the sample from the population. The data were analysed by descriptive and differential statistics. The major finding of this study revealed that the high school teachers had positive perception towards inclusive education. The study suggested that awareness and special training can be organized for the teachers to handle differently abled students by creating inclusive learning environment suited to them.

INTRODUCTION

Education is one of the main pillars in every society for its progress. It plays a significant two-way role in it, since it is a small community functioning within a civil society and reflecting all the ideas. Beliefs and perception of it and education has the power to foster new ideas and values towards the establishment of an equitable society for all. As we all know, tolerance and respect to the human rights and the diversity are of the essence for the successful functioning of any form of society, developing or developed, and of any big or small group of people.

The inclusive education in schools in India is still in its infancy. The success of such education of students with disabilities has been a big challenge for the administrators about imparting education to both normal and disabled students in the same class room. They are facing many challenges such as preparedness of teachers for inclusive education, imparting of training to teachers to handle successfully such students, lack of flexibility in the course curriculum, classroom size, bullying of such students, and need of extra attention from the teacher to such students and creating an

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environment suitable for personal development, social skills and students' effective participation.

NEED AND SIGNIFICANCE OF THE STUDY

Worldwide inclusive education has been established as a significant policy direction in regular as well as mainstream schools. The importance of studying the factors that influence the regular education teachers' perception of special education students incorporated into a regular education classroom is highly critical to the success of inclusion.

The regular education teachers must now accept this additional role. The teaching professionals with or without specialized training have to be involved with disabled students once they occupy this role. Teachers of today are expected to rise to the challenge of accommodating a wide range of students who are in the classrooms. Hence, a study on perception on inclusive education among high school teachers of today is found to be significant.

OBJECTIVES

1. The level of perception on inclusive education among high school teachers is at modulate level.

2. To find out whether any significant difference in their perception on inclusive education among high school teachers with respect to their demographic variables such as Gender (Male/Female), Educational Qualifications (UG/PG), Locality of School (Rural/Urban), working District (Salem / Namakkal / Krishnageri / Dharmapuri) and their Major Subject specialisation (Language/ Mathematics/Physical Science/Biological Science/ Social science).

HYPOTHESES

1. High school teachers' perception on inclusive education is high.
2. There is no significant difference in high school teachers' perception on inclusive education with respect to their demographic variables such as Gender (Male/Female), Educational Qualifications (UG/PG), Locality of School (Rural/Urban), working District (Salem/ Namakkal/ Krishnageri/ Dharmapuri) and Major Subject specialisation (Language / Mathematics/Physical Science/ Biological Science/ Social science).

METHODOLOGY IN BRIEF

METHOD

Normative survey method was adopted for the study.

SAMPLE

The investigator used purposive sampling technique for selecting the sample from the population. The sample included 503 high school teachers of Salem, Erode, Dharmapuri, and Krishnageri Districts of Tamilnadu.

TOOL USED

For this study the researcher has constructed and validated the following tool. Questionnaire for perception on inclusive education. The researcher used split-half method for the establishment of reliability of the tool. The reliability value of the tool was noted to be 0.82.

STATISTICAL TECHNIQUES USED

The collected data were analyzed by using statistical techniques like descriptive analysis (mean and standard deviation) and differential analysis (t test and F test).

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RESULTS AND DISCUSSION

TABLE 1

High School Teachers' Perception on Inclusive Education

Maximum Score: 48

Variables		Sample	Mean	Standard Deviation
Gender	Male	158	158.25	20.80
	Female	345	154.93	17.90
Educational Qualifications	UG	387	156.69	18.06
	PG	116	154.16	20.69
Locality of School	Rural	309	155.57	19.09
	Urban	194	157.28	18.22
Types of District	Salem	105	147.55	18.14
	Namakkal	100	156.73	15.06
	Krishnageri	165	154.56	18.48
	Dharmapuri	133	165.20	18.56
Major Subject	Language	205	156.41	19.25
	Mathematics	123	155.85	16.82
	Physical Science	57	152.72	20.01
	Biological Science	58	156.40	18.97
	Social Science	60	161.47	17.89
Total		**503**	**155.97**	**18.90**

From the table 1 it is inferred from the calculated mean value which is 155.97 indicates that teachers have above average level perception towards inclusive education.

TABLE 2

Significance of difference in Perception of High School Teachers towards Inclusive Education with respect to their Gender, Qualification and Locality

Sample Distribution	Sample		Mean	S. D	't' value
Gender	Male	158	158.25	20.80	1.73*
	Female	345	154.93	17.90	
Educational Qualifications	UG	387	156.69	18.06	1.16*
	PG	116	154.16	20.69	
Locality of School	Rural	309	155.57	19.09	1.00*
	Urban	194	157.28	18.22	

From the table 2, it is noted that the calculated 't' value 1.73, 1.16 and 1.00 which is lesser than the tabulated value 1.96 at 0.05 level of significance. Therefore, it can be concluded that there is no significant difference between male and female, UG and PG, and rural and urban high school teachers' perception towards inclusive education.

TABLE 3

Significance of difference among High School Teacher Perception towards Inclusive Education with respect to their Working district and Subjects Specialisation

Sample Distribution	Source of Variation	SS	Df	Ms	'F' value
Type of District	Between Groups	19074.01	3	6358.01	20.06*
	Within Groups	158167.17	499	316.97	
Major Subjects	Between Groups	2347.47	4	586.87	1.65@
	Within Groups	176639.44	498	354.70	

***Significant at 0.05 level** **@-Not Significant**

From the table 3, it is noted that the calculated 'F' value 20.06 is greater than the tabulated value 3.00 at 0.05 level of significance. Consequently it can be concluded that there is a significant difference among high school teachers' perception towards inclusive education based on their working districts. From the above table it is also noted that the calculated 'F' value 1.65 is found to be less than the tabulated value 3.00 at 0.05 level of significance. Hence the null hypothesis is accepted. Consequently it can be concluded that there is no significant difference in high school teachers' perception towards inclusive education based on their major subject specialisation.

FINDINGS

1. High school teachers' perception on inclusive education is high.

2. There is significant difference for high school teachers' perception on inclusive education with respect to their demographic variables such as Gender (Male/Female), Educational Qualifications (UG/PG), Locality of School (Rural/Urban), Working District (Salem/Namakkal/ Krishnageri/ Dharmapuri) and Major Subject specialisation (Language/Mathematics/Physical Science/Biological Science/Social Science).

CONCLUSION

Inclusive education is one of the important areas in the field of education because each and every student has unique opportunities to learn the lessons in the school. In the present scenario, Tamil Nadu Government is conducting many programmes such as in-service and orientation programmes for the development of inclusive education. Today all over the world more attention is paid for the education of all including the differently abled ones. From the analysis it is found that high school teachers have positive perception towards inclusive education. The result showed that the males are better than female high school teachers and UG school teachers are superior to PG high school teachers and urban high school teachers are higher than rural high school teachers towards inclusive education. In Dharmapuri high school teachers have more knowledge towards inclusive education. History major students are better than the other type of subject specialised high school teachers towards inclusive education.

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A Study on Eco-Friendliness among Secondary School Students

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ABSTRACT

The main aim of the present study is to find out the eco- friendliness among secondary school students. Survey method is used in this study. A test in eco friendliness is prepared for the collection of data. One hundred secondary school students are taken as sample for the study. Statistical techniques used in this study are percentage analysis and t-test to find out the significant differences between sub samples selected for the study. The result shows that both girls and boys are almost equal with respect to their level of eco friendliness. Most of the students posses modulate level of eco friendliness. Based on the locale significant difference in eco friendliness are noted. Urban students are more conscious about their environmental issues and eco friendly solutions than their rural counterparts.

INTRODUCTION

Environmental degradation today is a global issue. Exploitation of nature by man to meet his needs and greed collapse the ecological balance. Besides these rapid, unplanned urbanization and changing consumption patterns in the race to achieve better living standard cause tremendous threat on environment. One of the prime reasons for these issues are lack of proper awareness about waste management. The change in the life style of people has also increased. The Indian society is fast adapting to western societies where packed foods are a common practice. This thereby increases the generation of solid waste. Solid waste is also due to industries and indiscriminate use of plastics in urban localities and domestic activities. The waste products may cause many hazardous problems to all.

Eco-friendliness means we can better ourselves, our society, and our environment. Reduced use of plastic resources is a better way to grow efficiently and practising recyclable or bio degradable products shall make significant contribution in saving non renewable natural resources. Thus an awareness about environment-friendly processes and products would surely help the humans to know about eco- friendly activities and products with less environmental impacts. Therefore, at this stage, youngsters especially school students need to adhere to the requirements and demands of nature so as to grow green, save water and other natural resources, and be stewards of our environment.

NEED AND SIGNIFICANCE OF THE STUDY

Nature friendliness here simply means being friendly with mother nature. Earth is the only planet where human beings can exist. Hence we need to be eco-friendly to save our planet earth and

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environment as well as making it a better place to live in. Today many million tons of waste materials are produced in the world. If not much we can make some significant efforts to help the planet earth. Paranjape et.al (2011) conducted a study regarding consumer behavior with reference to environmental awareness and buying preferences of environmental friendly products. The result of the study indicates that Indian consumers are aware of only about selected environmental issues without having any environment friendly behavior.

A person who is eco- friendly not only helps his surrounding to be less harmful, but also helps to save the fellow human beings and the animals around him. Raghavan and Vahamati (2008) found that the consumers in India have much less awareness about environmental and global warming issues. According to them there is 57 percent increase in CO2 emission in our environment.

Now globally efforts to reduce environmental degradation and health hazards due to industrialisation and the development of clean technologies are on. Therefore programmes on environmental awareness is catching on. Recognizing this fact we have to make our mother earth a better place for ourselves and for our future generation. Hence the problem namely eco-friendliness among secondary school students is a relevant problem for investigation and hence undertaken.

OBJECTIVES

1. To identify the level of eco friendliness among secondary school students. (Total sample)
2. To compare the mean scores of eco-friendliness of secondary school students based on gender and locale.

METHODOLOGY IN BRIEF

METHOD

Normative survey method is used in the present study.

SAMPLE

The sample selected are 100 secondary school students undergoing regular course of study.

TOOL USED

Tool used in the present study is a test to find out the eco-friendliness among secondary school students .The test consist of thirty multiple choice questions.

STATISTICAL TECHNIQUE USED

Statistical techniques used in the present study are percentage analysis, mean, standard deviation and test of significance.

RESULT AND DISCUSSION

Computation of Percentages on Level of Eco-friendliness among Secondary School Students (Total sample)

From the analysis of the data it is clear that the number of students possessing low average and high levels of eco-friendliness, were 20,63,17 and the corresponding percentages were 20%,63%,17% respectively. This indicates that most of the secondary school students have moderate level of eco-friendliness.

TABLE 1

Level of Eco-Friendliness among Secondary School Students

Total sample	100	percentage
Low level	20	20
Average level	63	63
High level	17	17

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Comparison of Mean Scores of Eco-friendliness based on Gender

TABLE 2

Data and Result of Mean Scores of Eco-FriendlinessBased on Gender of subjects

Sample	Mean	SD	t- value	Level of significance
Girls(N=46)	13.37	7.05	1.58	NS
Boys(N=54)	15.66	5.09		

The t-value was calculated to find out the gender differences on eco-friendliness. The girls have a mean value of 13.37 and boys have the mean value of 15.66. Standard deviation obtained for girls and boys were 7.05 and 5.09 respectively. The obtained t-value (1.58) is not significant. The results indicate that there is no significance of difference between boys and girls of secondary school students in their eco-friendliness. So it can be concluded that gender has no significant influence on eco-friendliness.

Comparison of Mean Scores of Eco-friendliness based on Locale

TABLE 3

Data and Result of Mean Scores of Eco-FriendlinessBased on Locale

Sample	Mean	SD	t- value	Level of significance
Urban (N=46)	18.05	6.36	7.6	0.05
Rural (N=54)	7.8	4.7		

The t-value was calculated to find out the influence of locality on eco-friendliness. Urban and rural secondary school students are taken as the sample. The mean value of urban school students and rural school students are18.05 and 7.8. The standard deviation obtained for urban and rural school are 6.36 and 4.7 respectively . The obtained t-value (7.6) is significant at 0.05 level. The results indicate that there is significant difference between urban and rural students of secondary school students in their eco-friendliness. Hence it can be concluded that locale has significant influence on eco-friendliness behaviour.

FINDINGS OF THE STUDY

The major findings of the present study are:

In the study the investigator tried to find out the level of secondary school students on their eco-friendliness. The results of the study show that most of the students possess modulate level of eco-friendliness. There is no significant difference in the eco friendliness of boys and girls. On the other hand level of eco friendliness among urban students are highly significant when compared to the rural students. Hence test of significance for difference between the means of urban and rural students reveals that there exist a significant difference in the level of eco friendliness.

EDUCATIONAL IMPLICATIONS OF THE STUDY

The findings of the study reveals that the present generation possess moderate level of eco friendliness. Many are aware of the environmental issues and their reasons. Gender has no role in determining eco friendliness. But urban students are more aware about the environmental issues and their sources and solutions as compared to the rural students. Therefore information regarding environmental issues and actions to increase awareness level should be given more in schools of rural areas. Further, the importance of the media, and role of families, and other voluntary organisations should try to change the thinking style and lifestyle among the future generations.

CONCLUSION

Our planet earth is much like a home but we never care to look after it like our homes. We utilize all its resources, we pollute it with waste or pollutants and we never think about the future of our younger generation. Millions of tons of waste materials are produced in the world and no one is trying seriously to manage them well. Therefore, a social revolution is needed for environmental conservation and protection. Talking about environmentalism will not save the earth and therefore legal action and environmental education from childhood above can save our mother earth.

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An Analytical Study on Library Anxiety among the Undergraduate Students

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ABSTRACT

Library anxiety is a kind of psychological fear felt by the users while accessing library and its sources. It is more common among the users in academic libraries in the beginning of their independent learning than in the later stages. When library environment is familiarised, it reduces gradually. This paper made an attempt to analyse library anxiety of undergraduate students. The survey was conducted among 1119 undergraduate students of Arts and Science Colleges and Engineering Colleges of Tirunelveli District with respect to selected variables. The study revealed that library anxiety exists among the undergraduate students. The perceived library anxiety is more among the first year students than second year students. Computer anxiety also exists among the undergraduate students. Moreover, undergraduate students differ significantly on library anxiety based on gender, discipline; parental education and membership in public libraries and computer anxiety has negative correlation with library anxiety.

INTRODUCTION

Library is playing a key role in the knowledge dissemination process in the ICT based information era. In the higher education system, classroom instructions are supplemented by the library centered teaching and learning. Self paced independent learning and acquiring life-long learning skills are the major objectives of higher education system. Using of academic libraries independently begins at undergraduate level only. There are several factors which influence the usage of academic libraries including anxiety. The feeling of anxiety when approaching a library is one of the barriers. It is a kind of psychological barrier hindering users' access to information, which may be described in the broader term, information barriers (Swigon, 2010). Library anxiety is therefore undoubtedly an important issue. It is the common phenomenon occurring among the majority of students (Mellon, 1986; Onwuegbuzie, Jiao, & Bostick, 2004).

Library anxiety is described as "an uncomfortable feeling or emotional disposition, experience in a library setting, which has cognitive, affective, physiological and behavioural ramifications" (Onwueghuzie, Jiao & Bostic, 2004). Library anxiety is characterized by negative emotions including - tension, fear, feelings of uncertainty and helplessness, negative self-defeating thoughts, and mental disorganization – that are experienced in the library setting. It is kind of psychological barrier that hinder user's access to information, and has been described in broader term as information barriers. Library anxiety has a debilitating effect on a user's ability to perform library information seeking process and research performance in general.

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Library anxiety is a multi-dimensional construct. Specifically, using exploratory factor analysis techniques, Bostick (1992) identified five barriers to library use which also are the major causes of library anxiety. These barriers are

a. Fear of unhelpful library staff (Barriers with the Staff)
b. Affective barriers
c. Ambience of the library (Comfort of the Library)
d. Lack of knowledge of the library
e. Mechanical barriers.

NEED AND SIGNIFICANCE OF THE STUDY

Academic libraries play a major role in achieving the objectives of an institution. On completion of their education, students are expected to acquire life-long learning skills and good study habits from the library. While accessing library, freshers are expected to face hindrances in searching information and may have one or many of the anxiety symptoms such as tension, fear, feeling of uncertainty, helplessness, negative and self-defeating thoughts. These types of feeling are caused by the stimuli induced by the library, called library anxiety. This type of anxiety is more prevalent among the freshers than the final year students at undergraduate level. The perceived library anxiety among the undergraduate students depend on several factors namely demographic variables of the students, educational background, previous experience in using or visiting nearby libraries, basic information literacy skills such as knowledge of information sources, ability on handling information technology (ICT) based electronic gadgets, positive perception about libraries, attitude towards library and information centres and library professionals. External variables also influence the library anxiety of undergraduate students. By adopting several remedial measures, these types of anxieties may be reduced among the students and help to develop positive attitude towards the library. Based on Bostick library anxiety scale, several studies were conducted among various user groups in abroad in the following years. More number of studies was conducted by Onwueghuzie, Jiao and Bostick (2004), Onwueghuize, et al. on various aspects of library anxiety. McPherson (2015) reported that lack of information literacy skills, lack of previous experience, and some institutional factors causing library anxiety among the undergraduate students. Scanning of the available literature in library and information science shows that no formal systematic study has been conducted among the undergraduate students in Indian setting. Hence, the present investigator felt the need to fill this gap and hence motivated to undertake a study to determine perceived library anxiety among the undergraduate students in Tirunelveli district.

OBJECTIVES

Objectives framed for the study are as follows:

1. To determine the level of perceived library anxiety and computer anxiety among the undergraduate students.
2. To compare the mean scores of library anxiety of undergraduate students with respect to the demographic variables such as gender, discipline, parent's educational level, achievement of students and membership in public libraries.
3. To identify the relationship between the dimensions of library anxiety and computer anxiety of undergraduate students.

HYPOTHESES

1. There is no significant difference in the mean scores of library anxiety among the users based on gender, discipline, parent's educational level, achievement of students and membership in public libraries.

2. There is no significant correlation between dimensions of library anxiety and the demographic variables including information literacy and computer anxiety.

METHODOLOGY IN BRIEF

METHOD

The present study is intended to study the perceived library anxiety among the undergraduate students and hence normative survey method was adopted for the present study.

SAMPLE

Respondents for the present study consist of 1119 undergraduate students from Arts and Science and Engineering Colleges in Tirunelveli district. Selection of the sample is done by using stratified random sampling techniques by giving due importance to selected independent variables under study.

TOOLS USED

Tools used for the present study is an adopted version of Bostick's(1992) library anxiety scale. It consists of forty one statements on six dimensions namely, barriers with staff, affective barriers, comfort with the library, knowledge of the library and mechanical barriers. Each of these statements is rated on a five point scale of Likert type. Similarly, Computer Rating Scale (CARS) is used for measuring perceived computer anxiety.

STATISTICAL TECHNIQUES USED

Collected data were analysed using the statistics like't' test, ANOVA and correlational analysis for testing hypotheses and hypotheses are tested at 0.05 level of significance. All the calculations are carried out using SPSS.

RESULTS AND DISCUSSION

The collected data are further analysed for drawing inferences:

1. Perceived Library Anxiety

The library anxiety scores of the respondents and various statistics calculated from the library anxiety scores of the respondents are summarised in table 1.

TABLE 1

Statistic values of Library Anxiety and its Dimensions

S.No	Library Anxiety and its Dimensions	Mean	S.D
1	Knowledge of the Library	22.46	4.09
2	Comfort with the Library	40.63	6.24
3	Barriers with the Library Staff	30.12	5.02
4	Mechanical Barriers	18.70	3.5
5	Affective Barriers	15.83	3.43
6	Library Anxiety	127.46	16.01

Table 1 shows that mean and standard deviation of library anxiety score of the respondents. The mean and standard deviation of library anxiety score are 127.46 and 16.01. It reveals that users in academic libraries have library anxiety and the intensity of library anxiety is above the medium level. The table also reveals the mean score of the dimensions of library anxiety as follows: Knowledge of the library (22.46); comfort with the library (40.63); barriers with the library staff (30.12); mechanical barriers (18.70) and Affective barriers (15.83).

Hence, it is interpreted that undergraduate students have library anxiety and it is above the medium level. High score in knowledge of the library and comfort with the library shows users in academic libraries have more anxiety due to these barriers.

2. Discipline wise Library Anxiety

Users in academic libraries belong to various disciplines, their information requirements and their approach to library may vary from one to another. Therefore, the library anxiety of the respondents is further analysed discipline wise and details are summarised in table 2.

TABLE 2

Discipline wise Library Anxiety

S.No	Discipline	N	Mean	S. D
1	Arts	439	126.6	12.1
2	Science	229	129.1	16.3
3	Humanities	145	122.9	15.2
4	Engineering	306	129.7	20
Total		1119	127.46	16.01

Table 2 shows the mean and standard deviation of library anxiety score of respondents discipline wise. The mean score of Engineering and Science discipline are respectively 129.7 and 129.1. Similarly, the mean scores of Arts and Humanities are respectively 126.6 and 122.9. From the table it is interpreted that library anxiety is more among the students of Engineering discipline followed by Science, Arts and Humanities.

3. Level of Library Anxiety

Library anxiety score of the respondents is further classified into low, medium and high based on mean and standard deviation. The details are summarised in table 3.

TABLE 3

Level of Library Anxiety

Sl.No	Level of Library Anxiety	Frequency	Percent
1	Low Level	135	12.1
2	Medium Level	835	74.6
3	High Level	149	13.3
Total		1119	100

Table 3 reveals that 74.6 percent of the respondents have medium level library anxiety and it is followed by 13.3 percent have high and 12.1 percent have low library anxiety. Thus, it is interpreted that majority of the undergraduate students in academic libraries have medium level library anxiety.

4. Year wise Level of Library Anxiety

Level of library anxiety of the undergraduate students is further classified into two namely library anxiety of First year students and library anxiety of Second year students based on the year of their study. Year-wise level of library anxiety among the undergraduate students is given in table 4.

TABLE 4

Year wise Level of Library Anxiety

S.No	Level of Library Anxiety	First Year	Second Year	Total
1	Low	81 (14.2)	93(16.9)	174
2	Medium	377(66.3)	409(74.4)	786
3	High	111(19.5)	48(8.7)	159
Total		569	550	1119

Table 4 discloses that 569 students out of 1119 belong to first year of their undergraduate programme and the remaining 550 students belong to second year.

The change in level of library anxiety of the first year students to second year students shows that 19.5 per cent (111 out of 569) to 8.7 per cent (48 out of 550) at high level library anxiety category, among median level category it is from 66.4 percent to 74.4 per cent and low level category it is from 14.2 per cent to 16.9 per cent.

The change in trend in perceived level of library anxiety among the first and second year undergraduate students shows gradual decline of high anxiety and increase in low level category. Hence, it is interpreted that changes exists among the undergraduate students on perceived library from first year to second year.

5. Comparison of Library Anxiety based on Gender

Library anxiety among users in academic libraries is compared on the basis of gender using student t test of analysis. The details of analysis are given in table 5.

TABLE 5

Comparison of Library Anxiety of the respondents based on Gender

S.No	Gender	N	Mean	Std. Dev.	t value
1	Male	351	129.13	19.16	2.36* *p=0.018*
2	Female	768	126.7	14.29	
Total		1119	127.46	16.01	

Table 5 depicts the mean and standard deviation of library anxiety score of male and female along with 't' values. The mean and standard deviation of male and female respondents are respectively 129.13; 19.16 and 126.7; 14.29. The calculated value of 't' is 2.36, which is significant at 0.05 level ($t = 2.36; p < 0.05$). Thus, the null hypothesis is not accepted.

Table also reveals that library anxiety is more among the male respondents than female respondents. Therefore, the academic users differ significantly in library anxiety among the users in academic libraries based on gender. The reasons for gender disparity in library anxiety are to be identified earlier to adopt remedial programmes to minimise library anxiety among the users in academic libraries.

6. Comparison of Library Anxiety based on Discipline

The respondents for the study belongs to different subjects are broadly classified into three disciplines namely Arts, Science and Social Science. The library anxiety among the respondents based on discipline is compared using one way analysis of variance. The details of ANOVA are summarised in table 6.

TABLE 6

Comparison of Library Anxiety based on Discipline

S.No	Discipline	N	Mean	S. D	Source of Variation	df	Mean Square	F Value
1	Arts	439	126.6	12.1	Between Groups	3	1848.5	*7.33** *p=0.000*
2	Science	229	129.1	16.3				
3	Humanities	145	122.9	15.2	Within Groups	1115	252.3	
4	Engineering	306	129.7	20				
Total		1119	127.46	16.01				

*** indicates the value is significant at 0.05 level**

Table 6 reveals the mean library anxiety of Arts, Science, Social Science and Engineering discipline are respectively 126.6, 129.1, 122.9 and 129.7. Also, the calculated value of F is 7.33 with *p* value 0.000 is significant at 0.05 level ($F = 7.33; p<0.05$). This indicates that the null hypothesis not accepted and library anxiety is more among the students of Science and Engineering discipline than Arts and Humanities.

Hence, it is interpreted that users in academic libraries differ significantly in library anxiety based on discipline.

7. Comparison of Library Anxiety based on Parents' Educational Level

The effects of parent's education on perceived library anxiety on their wards are also studied. The respondents are divided into four groups based on their parents education namely wards of Illiterate parents, parents having education below SSLC, HSC, Degree and above degree. The library anxiety among the sub groups are compared using ANOVA. The details of ANOVA are summarised in table 7.

TABLE 7

Comparison of Library Anxiety based on Parents Educational Level

S.No	Parents Education	N	Mean	S. D	Source of Variation	df	Mean Square	F Value
1	Illiterate	233	125.0	15.1	Between Groups	4	2127.5	*8.51** *p=0.000*
2	Below SSLC	503	125.94	14.0				
3	HSC	157	129.0	17.0	Within Groups	1114	249.8	
4	Degree	158	133..2	19.8				
5	Above Degree	68	129	16.3				
Total		1119	127.4	16.0				

*** indicates the value is significant at 0.05 level**

Table 7 reveals that library anxiety among the subgroups based on parents education differ, users have parents education below SSLC have less in library anxiety than the users have parents education higher than HSC. Also, the calculated value of F is 8.51 is significant at 0.05 level ($F = 8.51; p<0.05$). Thus, the null hypothesis is not accepted. Hence, it is interpreted that users in academic libraries differ significantly on library anxiety based on their parents' education. Parents' education influences the library anxiety among the undergraduate students.

8. Comparison of Library Anxiety based on having Membership in Public Libraries

Those students who have membership in public libraries during their school life are familiar with basic services of library services. It facilitates to acquire more skills in college libraries. Since, the environment in academic libraries are different from public libraries, the perceived library anxiety among the respondents are compared using student 't' test based on having membership with public libraries and others. The details of 't' test are in table 8.

TABLE 8

Comparison of Library Anxiety based on Membership in Public Libraries

S.No	Membership in Public Libraries	N	Mean	Std. Dev.	t value
1	Yes	302	126.8	14.4	*2.15** *p=0.031*
2	No	817	129.1	19.5	
Total		1119	127.4	16.01	

*** indicates the value is significant at 0.05 level**

Table 8 discloses that mean and standard deviation of respondents having membership in public libraries and who do not have membership in public libraries are respectively 126.8; 14.1 and 129.1; 19.5. Moreover, the calculated value of t is 2.15 with *p* value, which is significant at 0.05 level ($t=2.15; p<0.05$). Therefore, the null hypothesis is not accepted.

Hence, it is interpreted that significant difference exists among the users in academic libraries based on having membership in public libraries.

9. Computer Anxiety

The computer anxiety rating scale consists of 19 statements covering various aspects of computer and its usage in libraries and each statement is rated on a five point scale. The details of statistic on computer anxiety of the respondents are given in table 9.

TABLE 9

Computer Anxiety of Respondents

S.No	Statistic – Computer Anxiety	Value
1	N	1119
2	Mean	59.17
3	Standard Deviation	8.08
4	Minimum	31
5	Maximum	86
6	Percentile 33.33	56
7	Percentile 66.66	62

Table 9 reveals that the mean computer anxiety score of the respondents is 59.17 and standard deviation is 8.08. The minimum as well as maximum scores in computer anxiety are respectively 31 and 86. Similarly, the 33.33 and 66.66 percentile scores of computer anxiety of the users are respectively 56 and 62. From the table, it is interpreted that computer anxiety is prevailing among the undergraduate students (Mean = 59.17; SD = 8.08). Familiarity of computer at higher secondary stage helps to reduce their computer anxiety.

10. Correlation of Library Anxiety and Computer Anxiety

Further co-relational analysis is carried out to determine the extent and degree of correlation between selected demographic variables with the dimensions of library anxiety using Pearson Product moment method of correlation. The details of correlation co-efficient with significant level are given in table 10.

TABLE 10

Correlation Analysis

Variables	Knowledge of the Library	Comfort with the Library	Barriers with the Library Staff	Mechanical Barriers	Affective Barriers	Library Anxiety
Gender	-0.013	-0.054	-0.068*	-0.044	-0.031	-0.071*
Discipline	-0.062*	0.015	-0.063*	0.074*	-0.046	-0.022
Parents Educational Level	0.113**	0.083**	0.162**	0.103**	0.067*	0.153**
Membership in Public Libraries	-0.065*	-0.012	-0.059*	-0.046	-0.044	-0.064*
Computer Anxiety	0.314**	0.296**	0.261**	0.238**	0.221**	-0.378**

Library Anxiety has moderate significant negative correlation with computer anxiety (r =- *0.378; p<0.01*), and very low significant positive correlation with parental education (*r = 0.153; p<0.01*) at 0.01 level.

FINDINGS OF THE STUDY

Findings emerged from the analysis are given as follows:

1. Undergraduate students have library anxiety and the intensity of library anxiety is above the mean.
2. The mean score of the dimensions of library anxiety are as follows: Knowledge of the library (22.46); comfort with the library (40.63); barriers with the library staff (30.12); mechanical barriers (18.70) and Affective barriers (15.83). High score in knowledge of the library and comfort with the library shows users in academic libraries have more anxiety due to these barriers.
3. The perceived library anxiety is more among the first year students than the second year students.
4. Library anxiety is more among the students of Engineering discipline followed by Science, and then by Arts and Humanities.
5. Majority of the respondents (74.6 per cent) have medium level library anxiety and it is followed by 13.3 per cent with high level and 12.1 per cent with low level library anxiety.
6. Users in academic libraries differ significantly in library anxiety based on gender (*t = 2.36; p <0.05*) and membership in public libraries (*t=2.15; p<0.05*).

7. Users in academic libraries differ significantly in library anxiety based on discipline ($F = 7.39; p<0.05$) and parental education level ($F = 8.51; p<0.05$).

8. Computer anxiety prevails among the undergraduate students.

9. Library Anxiety has moderate significant negative correlation with computer anxiety (r =- $0.378; p<0.01$), and very low significant positive correlation with parental education ($r = 0.153; p<0.01$) at 0.01 level.

CONCLUSION

The study reports the survey conducted with the intention to determine perceived library anxiety among the undergraduate students of both Engineering Colleges and Arts and Science Colleges in Tirunelveli district especially among the beginners. The study reveals that undergraduate students have library anxiety; the perceived library anxiety is more among the first year students than second year students. The study also revealed that undergraduate students differ significantly in library anxiety based on gender, discipline, parents' education level, and membership in public libraries. Library anxiety has significant negative correlation with computer anxiety. The perceived library anxiety among the undergraduate students can be reduced by providing library instruction regularly to the users, providing positive library experiences, user friendly technology, value added library services, and fulfilling the information requirements of the users. Since, positive relation exists between library anxiety and information literacy, library professionals should come forward to provide information literacy programmes to imbibe good learning skills and regular reading habits.

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Development of an Edutainment Programme for Enhancing Problem Solving Skill in Geography of Higher Secondary School Students

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ABSTRACT

A major goal of education is to help students become more effective problem solvers, that is, people who can generate useful and original solutions when they are confronted with problems they have never seen before. It is hoped that by teaching through edutainment programme, Geography is a subject which is found to be rather difficult and less preferred by the students becomes easier, interesting and effective. In the present study the investigators intend to study the effectiveness of the self-developed Edutainment Programme for enhancing Problem Solving Skill in Geography of higher secondary school students. The results revealed that the developed Edutainment Programme is effective for enhancing Problem Solving Skill in Geography of higher secondary school students.

INTRODUCTION

As per the national perception, education is essential for all. It is fundamental for all round development, material and spiritual and has an acculturating role. It refines sensitivities and perceptions that contribute to national cohesion - a scientific temper and independence of mind and spirit- thus furthering the goals of socialism, secularism, and democracy as enshrined in the Indian Constitution. The National Education Policy (1986) discussed about a collective effort of the nation towards making education accessible and available to all, and says, "The Nation as a whole will assume the responsibility of providing resource support for implementing programmes of educational transformation, reducing disparities, universalization of elementary education, adult literacy, scientific and technological research etc."

Geography learning prepares the students to face various challenges in life. Edutainment is the act of learning through a medium that both educates and entertains. Benefits of edutainment, "education through entertainment" derive from the fact that brain's cognitive process at the time of playing is similar to the one occurring in the process of learning, so that it enable to produce motivation, repetition, self-control, meanings and the elaboration of information. Several games linked to Edutainment mechanism, specifically, were examined to understand how and to which extent they can promote study, memory development, attention, motivation, development of cognitive processes and of spatial abilities. Problem solving forms a part of thinking process which is considered to be most complex of all intellectual functions. By learning problem solving in geography, students should acquire ways of thinking, habits of persistence, curiosity and confidence in unfamiliar situations that will serve them well outside the classroom.

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The reviews of related literature enable one to know the means of getting to the frontiers of the problem; what has been done and what still remains to be done in the area. The study undertaken by Rashmy (2004) on "Edutainment in Social Science: Effectiveness of film music in teaching Social Science at the secondary level", is an experimental cum survey study conducted to prepare a film music supplement to the textbook of Social Science for Std VIII by analyzing the content and to test the effectiveness of Malayalam film music as a medium of edutainment in learning Social Science by comparing the achievement scores of the film music-based group and lecture method group. The result of the study showed that film music based method group is significantly superior to lecture method group with regard to post test achievement scores. The study also emphasised the educational implications that the entertainment endeavour like film music gives impetus to look for other means of entertainment which has the potentialities for academic applications. An experimental study was conducted by Koya and Safia (2013) on the "Effectiveness of edutainment learning strategy on achievement in Social Science". The result obtained from the study revealed that edutainment strategy is an effective strategy for enhancing achievement in Social Science. The study also revealed that the use of edutainment learning strategy is effective for the proper understanding and meaningful learning of the content and is an alternative method for effective learning. Sakesh (2013) developed an educational programme for nurturing affective characteristics among secondary school students. The findings of the study revealed that the developed educational programme was effective in nurturing affective characteristics among the students as it consists of a blend of activities that are integrated with the various subjects of the school curriculum. A good majority of the studies reviewed highlighted the importance of modern instructional strategies for effective learning especially edutainment, multimedia, cartoon, animation and computer assisted or based strategies. Almost all studies reviewed showed that problem solving abilities of students enhance when appropriate teaching strategies and suitable methods are adopted in teaching-learning process.

OBJECTIVES

1. To check the level of Problem Solving Skill in Geography of experimental and control groups.

2. To test the effectiveness of Edutainment Programme for enhancing Problem Solving Skill in Geography over Activity Oriented Method of teaching of higher secondary school students.

3. To test the effectiveness of Edutainment Programme for enhancing Problem Solving Skill in Geography of higher secondary school students with respect to gender.

HYPOTHESES

1. There is an average level of Problem Solving Skill in Geography of experimental and control groups.

2. The Edutainment programme helps for enhancing Problem Solving Skill in Geography than the Activity Oriented Method of teaching of higher secondary school students.

3. The Edutainment Programme is much effective to boys than girls for enhancing Problem Solving Skill in Geography at higher secondary school level.

METHODOLOGY IN BRIEF

METHOD

The investigator adopted experimental method with two group pre-test post-test design.

SAMPLE

The Sample for the study constitutes 176 plus two students from Govt. G.H.S.S Nedumangad and S.M.V Model Boys H.S.S of Thiruvananthapuram district. An intact group of 90 plus two level students were included in the experimental group and 86 students in the control group.

TOOLS AND MATERIALS

For collecting data the investigator used the following tools.

i. An Edutainment Programme for enhancing Problem Solving Skill in Geography of higher secondary school students (based on the Chapter 12- 'Geographical perspective on selected issues and problems' Standard XII).

ii. Lesson transcripts based on activity oriented method for the control group.

iii. A Problem Solving Skill Assessment Test in Geography – used both as pre-test and post-test for experimental and control group.

STATISTICAL TECHNIQUES USED

Mean, Standard Deviation, Percentage Analysis, t test, ANCOVA were used for analyzing the data.

RESULT AND DISCUSSION

The investigator analysed the data under following headings viz., Preliminary Analysis, Comparison of attainment of Problem Solving Skill in Geography of higher secondary school students taught through Edutainment Programme and Activity Oriented Method, Comparison of effectiveness of Edutainment Programme for enhancing Problem Solving Skill in Geography of higher Secondary school students with that of the Activity oriented method of instruction and Comparison of effectiveness of Edutainment Programme for enhancing Problem Solving Skill in Geography of higher secondary school students with respect to gender.

TABLE 1

The level of Problem Solving Skill in Geography of students in Experimental and Control Groups

Level of Attainment	No. of students in Control Group	No. of students in Experimental Group	Percentage (%) of students in Control Group	Percentage (%) of students in Experimental Group
Low	21	15	24.42	16.67
Average	48	62	55.81	68.89
High	17	13	19.77	14.44
Total	86	90	100	100

Table 1 shows that 55.81% students in Control group have average level of Problem Solving Skill whereas that of Experimental group possesses 68.89 %. The result indicates that there is an average level of Problem Solving Skill in Geography for the control and experimental groups.

TABLE 2

Test of significance of pre-test mean scores of experimental and control groups in Problem Solving Skill Assessment test in Geography

Groups	No. of Students	Mean	Standard Deviation	Critical Ratio	Significance level
Experimental	90	9.22	2.90	0.12	Not Significant
Control	86	9.15	4.51		

From the table 2 the critical ratio obtained is 0.12 which is not significant even at 0.05 level. Hence, there is no significant difference between the pre-test means of experimental and control groups. This indicates that the pre experimental status of the two groups is almost similar as indicated by the scores of pre-test.

TABLE 3

Test of significance of post-test mean scores of experimental and control groups in Problem Solving Skill Assessment test in Geography

Groups	No. of Students	Mean	Standard Deviation	Critical Ratio	Significance level
Experimental	90	17.6	4.42	9.72	0.01
Control	86	12.78	4.90		

From the table 3, the value of t at 0.01 level of significance is 2.6. Therefore, the calculated value (9.72) of 't' is significant at 0.01 level of significance. This shows that, there is significant difference between the post-test mean scores of students in the experimental and control groups. The higher value of mean post-test scores of the experimental group indicates the better performance of students in the experimental group. This clearly reveals the positive impact of Edutainment Programme administered by the investigator.

The pre-test and post-test scores of the control and experimental groups were subjected to ANCOVA to determine the effectiveness of Edutainment Programme for enhancing Problem Solving Skill in Geography over Activity Oriented Method of instruction. There is significant difference between the adjusted Y means. This indicates that the students of experimental and control groups differ significantly in the post-test scores. Since the adjusted means of post-test scores of the students in the experimental group is greater than that of control group, the experimental group is superior to the control group in terms of the enhancement of Problem Solving Skill in Geography.

FINDINGS OF THE STUDY

The following are the major findings of the study:

1. There is an average level of Problem Solving Skill among experimental and control groups.
2. The Edutainment Programme helps for enhancing Problem Solving Skill in Geography of higher secondary school students than the Activity Oriented Method of teaching.
3. The Edutainment Programme is much effective to girls than boys for enhancing Problem Solving Skill in Geography at higher secondary school level.

CONCLUSION

The attempt to adopt edutainment strategy to educate or inform in order to increase pupils' knowledge on geographical issue created positive attitude to it, developed problem solving skill and thus resulted in changed behaviour. The study mainly focused on the assessment of the effectiveness of edutainment programme in Geography prepared by the investigator for providing tangible learning experience for students and thereby development of problem solving skill. The study found that the developed Edutainment Programme is effective for enhancing Problem Solving Skill in Geography of higher secondary school students.

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Scope of Reflective Learning of Commerce among Higher Secondary School Students

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ABSTRACT

Learning is both an active and reflective process. Though we learn by doing, constructing, building, talking, and writing, we also learn by thinking about events, activities and experiences. Reflective learning is a form of education in which the student reflects upon their learning experiences. An educational system should reflect quality, excellence and innovation. Today's highly developed industrial, commercial and business world requires highly qualified and smart commerce graduates. Therefore, it is essential to shape and mold the commerce students to suite to the global challenges. Recognizing the importance of reflective learning in the present scenario, this paper discusses the scope of reflective learning among commerce students of higher secondary schools.The sample of the study consists of 100 higher secondary school students from the schools of Kottayam district.The findings of the study revealed that there exists medium level of reflective learning among commerce students.

INTRODUCTION

Learning is both an active process with reflectiveness. Though we learn by doing, constructing, building, talking, and writing, we also learn by thinking about events, activities and experiences. This confluence of experiences (action) and thought (reflection) combines to create new knowledge. Both action and reflection are essential ingredients in the construction of knowledge. Reflective learning is a form of education in which the student reflects upon their learning experiences. Reflective learning is a way of allowing students to step back from their learning experience to help them develop critical thinking skills and improve on future performance by analyzing their experiences. This type of learning, helps to move the student from surface to deep learning, which include a range of activities, like self-review, peer review and Personal Development Planning. In 'Reflection on Practice' Patricia McClure focus more on 'Role of Reflective Practice' in learning. (Patricia, 2002)

Reflection is a part of learning and thinking. We reflect in order to learn something or we learn because of reflectiveness. The term 'reflective learning emphasizes the intention to learn from current or prior experience. As a part of education, reflection as a process allows the student to establish connections between new and existing knowledge and experiences, to understand their own position within that relationship and to deepen the level at which they work with them at the academic, personal and professional levels.

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NEED AND SIGNIFICANCE OF THE STUDY

Commerce education today plays a crucial role in our society. It is intended for acquiring a conceptual knowledge and managerial skills in the wide spectrum of business and trade. Today's highly developed industrial, commercial and business world requires highly qualified,smart and skilled commercial graduates. Therefore it is essential to shape and mold the commerce students to suite to the global challenges of our society.

Any educational system today should reflect quality, excellence and innovation. We should create vast exciting and ever evolving educational opportunities, to facilitate students to realize their potential in ways that they have planned and perhaps in ways that they would not have imagined. It is necessary that the course should be designed in such a way that it gives adequate importance in developing the ability of students to think creatively and independently.

Commerce education has greater significance in society for developing individuals to take up commercial activities efficiently. So, a commerce student should have good understanding, insight, attitudes and skills for taking up such activities effectively. Components like reflective learning, problem solving and collaboration skills have significant role and importance in the transaction of commerce curriculum. Various studies such as 'Developing certain designs for promoting reflective learning practices at Secondary level' (Asha, 2012) emphasized on the importance of promoting reflective learning practices .

Reflective learning is a process of specifically analyzing and making judgment. Here a learner analyses on "What they know and what they want to know". The reflective learning catalyses mastering of the commerce subjects such as Business studies and Accounting concepts. Reflective learning thus helps the learner to develop their communication, presentation and thinking skills.

OBJECTIVES

1. To find out the level of reflective learning among higher secondary school students – Total and subsamples.
2. To compare the level of reflective learning among higher secondary school students with respect to gender.

METHODOLOGY IN BRIEF

METHOD

Survey method was adopted to collect data for the study. A Test constructed was used to collect the data regarding reflective learning.

SAMPLE

A Sample of 100 higher secondary school students were selected from the schools in Kottayam district.

TOOL USED

In order to assess the reflective learning, a test was prepared by the investigator.

STATISTICAL TECHNIQUES USED

1. Percentage analysis
2. Test of significance of difference between means

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RESULT AND DISCUSSION

TABLE 1

CONTENT ANALYSIS

Units	Learning objectives
Banking Commercial banks-functions	Pupils are able to understand the functions of banking, gain experience in transactions done in banking and get knowledge in filling-up various forms with sample figures.
e-Banking Latest trends in banking , e-banking –meaning, online	Students analyze the functions of ATM card, credit card, pay time card etc. Evaluate the safety measures to be undertaken during e-cash transaction.
e-Transaction, benefits, drawbacks	Students enhance experience, understand and analyze the e-banking transactions, examine the benefits , understand and evaluate drawbacks of e-banking and determine the precautions to be taken before operating e-banking transaction.

The reflective learning helps mastering the commerce subjects such as e-commerce, financial services and transportation. Reflective learning thus helps the learner to develop their communication, presentation and thinking skills. Hence, it is necessary to create vast, exciting and ever evolving educational opportunities to facilitate students to realize their potential in ways that they have planned and perhaps in ways that they would not have thought of. Reflective learning therefore is a process of specifically analyzing and making one's own judgments. Here, a learner thus analyses on "What they know and what they want to know". By this it is clear that the scope of reflective learning is highly significant in the modern commerce curriculum.

1. PERCENTAGE ANALYSIS

Level of reflective learning of higher secondary Commerce students.

To find out the level of reflective learning scores of higher secondary school students, they were grouped according to their levels viz… high, medium, and low, based on their reflective learning scores. The mean and standard deviation of the total scores were calculated. Those getting scores at or above $m + \sigma$ were grouped as high level, those getting scores between $m - \sigma$ were grouped as low reflective learning group and those getting scores between $m + \sigma$ and $m - \sigma$ were grouped as medium reflective learning

TABLE 2

Distribution of different levels of reflective learning

Reflective Learning	No.of Students	Percentage
High	11	11
Medium	66	66
Low	23	23
Total	**100**	**100**

From table 2 it is clear that the numbers of sample population according to low, medium and high levels of reflective learning were 23, 66, 11 and the corresponding percentage were 23%, 66% and 23% respectively. This indicates that most of the higher secondary school students possess medium level of reflective learning practices.

PERCENTAGE DISTRIBUTION OF DIFFERENT LEVELS OF REFLECTIVE LEARNING ON THE BASIS OF GENDER

TABLE 3

Percentage distribution of different level of reflective learning on boys

Level of Reflective learning – boys	No. of Students	Percentage
High	7	14
Medium	34	68
Low	9	18
Total	50	100

From table 3, it is clear that the numbers of sample according to high, medium and low levels of reflective learning were 7,34,9 and the corresponding percentage were 14%, 68%, and 18% respectively. This indicates that most of the boys in higher secondary school students possess medium level of reflective learning.

TABLE 4

Percentage distribution of different level of reflective learning on girls

Levels of Reflective learning– girls	No. of Students	Percentage
High	14	28
Medium	32	64
Low	4	8
Total	50	100

From table 1.4, it is clear that the numbers of sample according to low, medium and high levels of reflective learning were 4, 32, 14 and the corresponding percentage were 8%, 64% and 28% respectively. This indicates that most of the girls in higher secondary school students possess medium level of reflective learning.

2. Comparison of Reflective Learning of Higher Secondary School Students on the Basis of Gender

The t- value was calculated to find out the significant difference if any in reflective learning of higher secondary school student's. The mean, standard deviation and t- value were presented in the following table.

TABLE 2.1

Data and results of Test of significance of reflective learning on the basis of gender.

Gender	N	Mean	SD	t- value
Boys	50	43.4	6.6	4.32
Girls	50	38.3	5.1	

The table reveals that the value of the t- test obtained is 4.32. Since the obtained value is higher than the table value 2.58, there is significant difference between boys and girls at 0.01level. So the null hypothesis is at rejected at 0.01level.

FINDINGS

The present study is an attempt to examine reflective learning among commerce students of higher secondary schools. The findings of the study revealed that there exists medium level of reflective learning among commerce students and it is comparatively high in boys than girls. This could be mainly because of the fact that the current lecture method does not have enough space and time to include reflective practice. Precisely, reflective thinking focuses on the process of making judgments about what has happened. However, reflective thinking is most important in prompting learning during complex problem-solving situations as it provides students with an opportunity to step back and think about how they actually solve problems

and how a particular set of problem solving strategies is appropriated for achieving their goal. So the schools must provide opportunities to enhance the student's reflective learning through the activities like group discussion, computer supported collaborative learning, production of original materials and writing reflective articles in journal. In this way students can enhance their opportunities to share their ideas and engage in meaningful tasks prior to learning to generate reflective ideas and products.

EDUCATIONAL IMPLICATIONS

In the present study, it was found that there is only average level of reflective learning among commerce higher secondary students.Reflective learning is a way of allowing students to reflect on their learning experience ,to help them develop critical thinking skills and improve on future performance by analyzing their own experiences.

When students become reflective thinkers especially on their teaching and learning process, they are in a way strengthening their own capacity to learn. Central to this is the principle of reflection as metacognition, where students are aware of and can describe their thinking in a way that allows them to "close the gap" between what they know and what they need to learn.Reflective learners assimilate new learning, relate it to what they already know, adapt it for their own purposes, and translate thought into action. Over time, they develop their creativity, their ability to think critically and their meta cognitive ability.

Modern society is becoming more complex, where the rapid changes are prompting users to constantly rethink, switch directions, and change problem-solving strategies. Thus, it is increasingly important to prompt reflective learning to help learners develop strategies to apply new knowledge to the complex situations in their day-to-day activities. Reflective thinking helps learners develop higher-order thinking skills by directing learners to a) relate new knowledge to prior understanding, b) think in both abstract and conceptual terms, c) apply specific strategies in novel tasks, and d) understand their own thinking and learning strategies.

SUGGESTIONS TO IMPROVE REFLECTIVE LEARNING

1. Provide enough wait-time for students to reflect when responding to inquiries.

2. Provide emotionally supportive environments in the classroom

3. Prompt reviews of the learning situation- what is known, what is not yet known, and what has been learned.

4. Prompt students' reflection by asking questions that seek reasons and evidence.

5. Provide some explanations to guide students' thought processes during explorations.

6. Provide social-learning environments such as those inherent in peer-group works and small group activities to allow students to see others points of view.

7. Provide reflective journal to write down students' perceptions, give reasons to support what they think. Show awareness to opposing positions and the weaknesses of their own positions.

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Critical Thinking Ability of Higher Secondary Students

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ABSTRACT

In this study, the investigators made an attempt to study the Critical Thinking Ability of higher secondary students. The objectives of the study were to study the level of Critical Thinking Ability of higher secondary students and to find out whether there is any significant difference in the mean scores of Critical Thinking Ability of higher secondary students with respect to the background variables like sex, locality, type of management and community. Normative Survey method was adopted for the present study. The sample for the study consisted of 400 higher secondary students. The study in general revealed that the higher secondary students possessed low Critical Thinking Ability. It was also found that gender, locale and community had influence on critical thinking ability of higher secondary students.

INTRODUCTION

Thinking is a unique gift provided by nature to man. Thinking involves manipulating and transforming information in the brain. This often results in forming concepts, reasoning, thinking critically, making decision, thinking creatively and solving problems. Thinking thus is a higher order mental activity that goes on in the brain while a person in processing and organising information.

Education which aims at helping an individual towards the realization of the best and most human qualities he finds in himself, has lagged behind this objective in most of the instances. The important aims of education are achieving the cognitive, affective, and psychomotor activities. Most of the schools give much priority for the transference of knowledge neglecting affective and psychomotor domains. Students must be educated to face an unpredictable future, for which they have to be exposed to the situations in which their thinking ability operates independently and critically. This ability of thinking is present in human beings in different forms such as critical thinking, creative thinking, logical thinking and lateral thinking. Education thus makes the individual to think critically and creatively and to take appropriate decisions for various problems.

Critical thinking is a complex of intellectual skills that are consciously, deliberately, and consistently applied by a thinker when he or she is confronted by a body of data from which a conclusion or solution must be derived, or by an argument of a third party who wishes the thinker to accept a predetermined interpretation, point of view or conclusion. (Hudgins, 1988). In this sense, Critical thinking is regarded in the broadest terms rather than narrowly, and it is thought of as an intellectual process that is natural, if sometimes unrefined, outgrowth of normal educational efforts. Critical thinking obviously is based on concepts and principles, not based on hard and fast procedures.

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Critical thinking means correct thinking in the pursuit of relevant and reliable knowledge about the world. A person who thinks critically can ask appropriate questions, gather relevant information, sort the information efficiently, reason logically and come to a reliable and trust worthy conclusion about the world that enable one to live and act successfully in it.

NEED AND SIGNIFICANCE OF THE STUDY

Every organism that exists on the earth will have the ability to adjust, and the ability to learn, but it is only the human species, which posses one more ability that is ability to think. That is why human beings are called intellectual animals. Critical Thinking is a higher order well disciplined thought process, which involves the use of cognitive skills like conceptualization, interpretation, analysis, synthesis and evaluation for arriving at an unbiased, valid and reliable judgment of the gathered or communicated information or data as a guide to one's belief and action. Critical Thinking is a reasonable reflective thinking that is focused on deciding what to believe or do. Critical Thinking consists of mental processes like synthesizing, analyzing and evaluating. It includes all possible processes of relative tangible or intangible items in order to form a solid judgment that reconciles scientific evidence with commonsense. Critical Thinking is therefore considered as an important variable in the academic field because it enables one to analyze, evaluate, explain and restructure one's thinking. It helps to decide what is right and what is wrong. In recent years critical thinking has become a central focus of education and hence the need of the hour is to develop critical thinking ability among our students and it has before as one of the life skills needed for all.

Therefore in the educational domain it is the chief responsibility of the teacher to enhance the thinking dimensions of the learner so that students will be coming with new or novel ideas which no one has thought before. For these to happen teachers should plan certain activities which will lead them to think critically and independently. So classrooms must provide ample opportunities for the students to develop critical thinking ability and become autonomous thinkers. The present study therefore is an attempt to find out the Critical Thinking Ability of Higher Secondary Students.

OBJECTIVES

1. To study the level of Critical Thinking Ability of higher secondary students.

2. To find out whether there is any significant difference in the mean scores of Critical Thinking Ability of higher secondary students with respect to the background variables like sex, locality, type of management and community.

HYPOTHESES

1. There is significant difference in the mean scores of Critical Thinking Ability of male and female higher secondary students.

2. There is significant difference in the mean scores of Critical Thinking Ability of urban and rural higher secondary students.

3. There is significant difference in the mean scores of Critical Thinking Ability of higher secondary students belonging to government and self financing higher secondary schools.

4. There is significant difference in the mean scores of Critical Thinking Ability of higher secondary students who belong to various communities.

METHODOLOGY IN BRIEF

METHOD

Normative survey method was adopted for this study.

SAMPLE

The present study was conducted on a sample 400 higher secondary students studying in different schools of Kanniyakumari district.

TOOL USED

Critical Thinking Ability Test constructed and validated by Deepa and Sadanandan (2011).

STATISTICAL TECHNIQUES USED

Arithmetic mean, Standard Deviation and t test were used for the analysis of data.

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TABLE 1

Level of Critical Thinking Ability of Higher secondary students

N	Mean	S.D
400	11.93	3.63

From the above table, the arithmetic mean was found to be 11.93 out of a total of 40. This shows that the higher secondary students have low level of Critical Thinking Ability.

TABLE 2

Comparison of Critical Thinking Ability Scores of Male and Female Higher Secondary Students

Sex	Mean	S.D	N	t-value	P-value	Level of Significance
Male	11.46	3.26	216	2.809	0.005	Significant at 0.01 level
Female	12.49	3.96	184			

The obtained t-value (t-2.809, P Â 0.05) is significant at 0.01 level. This result indicates that there is significant difference between the male and female higher secondary students in their Critical Thinking Ability. So it can be concluded that sex has influence on the Critical Thinking Ability of higher secondary students.

TABLE 3

Comparison of Critical Thinking Ability Scores of Rural and Urban Higher Secondary Students

Locale	Mean	S.D	N	t-value	P-value	Level of Significance
Rural	11.44	3.44	207	2.820	0.005	Significant at 0.01 level
Urban	12.46	3.77	193			

The obtained t-value (t-2.820, P Â 0.05) is significant at 0.01 level. This result indicates that there is significant difference between the rural and urban higher secondary students in their Critical Thinking Ability. So it can be concluded that the locale has influence on the Critical Thinking Ability of higher secondary students.

TABLE 4

Comparison of Critical Thinking Ability Scores of Higher Secondary Students classified on the basis of community

Community	Mean	S.D	Source	Sum of Squares	df	Mean Square	F value	P value	Level of significance
FC	12.61	3.61	Between group	229.3	3	76.44	6.018	0.001	Significant at 0.01 level
BC	12.17	3.63	Within group	5029.8663	396	12.70			
MBC	9.61	3.47	Total	5259.1775	399				
SC	11.29	2.97							

The obtained F value (F-6.018) is significant at 0.01 level. This result indicates that there is significant difference in the Critical Thinking Ability of higher secondary students who are belonging to various communities. So it can be concluded that community as a factor has influence on the Critical Thinking Ability of higher secondary students.

TABLE 5

Comparison of Critical Thinking Ability Scores of Higher Secondary Students classified on the basis on types of management

Types of Management	Mean	S.D	Source	Sum of Squares	df	Mean Square	F value	P value	Level of significance
Government	11.85	3.54	Between group	60.7	2	30.37	2.319	0.100	Not Significant
Aided	11.58	3.49	Within group	5198.4	397	13.09			
Private	12.48	3.85	Total	5259.2	399				

The obtained F value (2.319) is not significant at any level. This result indicates that there is no significant difference in the Critical Thinking Ability of higher secondary students belonging to Government, Aided, and Self financing schools. So it can be concluded that type of management has no influence on the Critical Thinking Ability of higher secondary students.

FINDINGS

1. The higher secondary students have low Level of Critical Thinking Ability.
2. Gender, locale and community have influence on the Critical Thinking Ability of higher secondary students.
3. Type of management has no influence on the Critical Thinking Ability of higher secondary students.

CONCLUSION

The study revealed that higher secondary students have low Critical Thinking Ability. It was also found that gender, locale and community had influence on Critical Thinking Ability of higher secondary students. Since the higher secondary students have only low level of Critical Thinking Ability the teachers should take necessary steps to foster critical thinking ability among the higher secondary students. Teachers needs to become increasingly reflective about their own practice in order to built the values, Skills, Knowledge and process of critical thinking into the subjects, which they teach. There is a need for shift, from a teacher-centered classroom to student-classroom in which students can be involved in collecting and analysing information, problem- solving, cooperative learning settings, debates and critical reporting sessions. Teachers must encourage exploration, discovery, free discussions and debates to make the students think critically.

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Locus of Control of Women College Students

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ABSTRACT

In this study, the investigator made an attempt to study the locus of control of women college students. The objective was to study the level of locus of control based on their personal variables and educational variables. Normative survey method was adopted. The sample for this study consisted of 400 women college students studying in Arts and Science colleges of kanniyakumari district. The study revealed that women college students have moderate level of locus of control. Also it found that religion, order of birth, locality and type of management have influence in their locus of control and the community of students have no significant influence in their locus of control.

INTRODUCTION

The purpose of education in to make human beings capable, competent and wise so as to meet the challenges of life. To accommodate all these factors, one need to be determined, dedicated, innovative and be able to work independently and collaboratively with motivation. Hence one must remember that a number of elements predict motivational level of students and locus of control which often decides one's destiny.

Locus of control is a construct that defines how people attribute determinants of events in their life activities. Rotter (1975) argues that internality and externality represents two ends of continuum. An internal locus (place) of control is where a person believes that they can influence the events of their lives through their decisions and efforts. An internal locus of control means a greater degree of internal self-control, self-motivation and the influence we have on others and our environment. It can also mean that we're likely to be more intellectually curious and active as regards our own learning.

An external locus of control is an exact opposite of internal locus of control. A person may believe that everything that happens to them is due to luck, or others, or factors beyond their control. Many children with an external locus of control mistakenly believe that "everything will turn out okay whether I work or not". They fail to see the connection between their own efforts and achievement and ultimately success.

Internals believe that outcome of their actions are a result of their ability. On the contrary, externals believe that environment forces determine their life events around. They blame the environment and become submissive or aggressive. Thus, locus of control and assertive behaviour determines the overall behaviour of students.

NEED AND SIGNIFICANCE OF THE STUDY

The concept of locus of control has a significant effect on one's daily life. In the area of personality psychology, locus of control refers to the degree to which people expect that they can control events that have impact on them. College

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students have the ability to develop either one type of locus of control and it may be internal or external. Individuals with a strong internal locus of control deem that they have ability to control their own life. It means that they believe that the result of their behaviour depend on their own behaviour while externals believe that the result is a function of certain uncontrollable factors.

People could understand that locus of control is continuum. There has not a hundred percent external or internal locus of control personality. On the contrary a majority of people locate on the point between hundred percentage of internal and hundred percentage of external characteristics.

Developing an internal locus of control can influence a students' life style. Understanding the connection between trying and practicing and achieving a successful outcome, leads to the belief that it's the trying, not the ability they were born with, that leads to success. It's important for students to recognize the importance of persistent effort. When students attribute their success to luck or the ease of the task, they are likely to lose motivation. Attributing success to the fact that they worked hard and put in a lot of effort, leads to strong motivation.

OBJECTIVES

1. To construct and validate a tool to measure the locus of control of women college students.
2. To study the type of locus of control orientation of women college students.
3. To study the locus of control orientation of women college students with regard to the personal variables viz.,
   i. Religion (Hindu, Christian, Muslim)
   ii. Community (FC,BC,MBC,SC/ST)
   iii. Order of birth (first/other than first)
4. To study the locus of control orientation of women college students with regard to their social variables viz.,
   i. Locale of the college (rural/urban)
   ii. Type of management (Government, Aided, Self-financing)

HYPOTHESES

Null hypotheses framed for the present investigation are the following.

1. There is no significant difference in the mean scores of locus of control orientation of women college students with reference to the personal variable namely religion.

2. There is no significant difference in the mean scores of locus of control orientation of women college students with reference to the personal variable viz., community.

3. There is no significant difference in the mean scores of locus of control orientation of women college students with reference to the personal variable viz., order of birth.

4. There is no significant difference in the mean scores of locus of control orientation of women college students with reference to the social variable viz., locality.

5. There is no significant difference in the mean scores of locus of control orientation of women college students with reference to the educational variable viz., type of management.

METHODOLOGY IN BRIEF

METHOD

Normative survey method was used for the study.

SAMPLE

The present study was conducted on a sample 400 women college students studying in different colleges of kanniyakumari district.

TOOLS USED

Locus of control scale constructed and validated by the investigator.

STATISTICAL TECHNIQUES USED

1. Percentage analysis.
2. *t* test.
3. ANOVA, followed by Scheffee procedure.

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RESULTS AND DISCUSSION

TABLE 1

Percentage wise distribution of different levels of locus of control

Locus of control Orientation	Count	Percent
Low	66	16.50
Moderate	258	64.50
High	76	19.00
Total	400	100.00

College students who get scores above 46 were treated as internals and those getting scores below 34 as externals. In this study 64.5 percent of students got scores between 34 and 46 and hence their locus of control is a combination of both internal and external. That is majority of the women college students have a combination of both internal and external locus of control.

This may be because of the reason that they believe that their success and failure is because of their own actions and sometimes they attribute it to external factors such as parents, teachers and friends .

TABLE 2

Comparison of scores of locus of control orientation based on personal variable – religion

Religion	Mean	SD	Source	Sum of Squares	df	Mean Square	F	*p*	*Remark*
Hindu	38.83	5.72	Between Gp	654.44	2	327.22	9.272	*0.000*	*Sig. at 0.01 level*
Christian	40.83	6.22	Within Gp	14010.35	397	35.29			
Muslim	42.79	6.1	Total	14664.80	399				

The calculated F value (F- 9.272; P<0.01) is significant at 0.01 level and hence the null hypothesis is not accepted. It showed that there exists significant difference between Hindu,Christian and Muslim women college students in their locus of control orientation.

TABLE 3

Comparison of scores of locus of control of women college students based on personal variable – community

Community	Mean	SD	Source	Sum of Squares	df	Mean Square	F	*p*	*Remark*
FC	39.78	6.33	Between Gp	167.01	3	55.67	1.521	*0.209*	*NS*
BC	40.27	5.73	Within Gp	14497.79	396	36.61			
MBC	39.46	6.69	Total	14664.80	399				
SC and ST	38.19	6.89							

Results in table 3 showed that the obtained F value (F- 1.521; P>0.05) is not significant at any level and hence the null hypothesis is accepted. It showed that there exists no significant difference among FC, BC, MBC, SC and ST women college students in their locus of control. That is locus of control of Women College students do not statistically differ with their community.

TABLE 4

Comparison of scores of locus of control of women college students based on personal variable - order of birth

Order of Birth	Mean	SD	N	t	*p*	*Remark*
First	39.93	5.74	174	0.083	*0.93*	*NS*
Others	39.88	6.31	226			

The calculated t value (t-0.0.83; P>0.05) is not significant statistically any level. Hence the null hypothesis is accepted. It showed that the locus of control of women college students did not differ significantly with respect to their order of birth.

TABLE 5

Comparison of scores of locus of control of women college students based on educational variable – locality

Locality	Mean	SD	N	t	*p*	*Remark*
Rural	40.42	6.32	243	2.227	*0.026*	*Sig. at 0.05 level*
Urban	39.08	5.57	157			

Results in Table showed that the obtained t value (t-2.227; P<0.05) is significant at 0.05 level. Hence the null hypothesis is not accepted. It showed that there exists significant difference between rural and urban women college students in their locus of control. That is locus of control of women college students statistically differ with their locality. The mean value showed that rural women college students were more internals when compared to urban women college students.

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TABLE 6

Comparison of scores of locus of control of women college students based on educational variable – type of management

Type of Management	Mean	SD	Source	Sum of Squares	df	Mean Square	F	*p*	*Remark*
Aided	40.49	3.14	Between Gp	1600.0	2	799.98	24.309	*0.000*	*Sig. at 0.01 level*
Self-Finance	38.93	6.15	Within Gp	13064.8	397	32.91			
Government	44.64	4.52	Total	14664.8	399				

The calculated F value (F-24.309; P<0.01) is significant at 0.01 level. Hence the null hypothesis is not accepted. It showed that there exists significant difference in the locus of control of women college students studying in different type of management. The result does not help to identify exactly the pairs of groups which differ significantly. Hence the post hoc analysis test, scheffee multiple comparison test is used for further analysis.

TABLE 6.1

Results of Scheffe procedure

Type of Management	N	Pair	p (Scheffe)	*Remark*
Aided (A)	35	A Vs B	0.314	*NS*
Self-Finance (B)	307	B Vs C	0.000	*Sig. at 0.01 level*
Government (C)	58	A Vs C	0.004	*Sig. at 0.01 level*

The result showed that there exists significant difference between women college students studying in self-financing and government colleges and government and self-financing colleges in their locus of control.And other pair did not differ in their locus of control. The mean values showed that Government college women students were more internals when compared to aided and self-financing college women students.

FINDINGS

Following are the major findings of the present investigation

1. Majority of the women college students showed moderate level of locus of control. This is evident supported by the following result (64.50%).
2. Women college students have influence in their locus of control based on their religion order of birth, locality and type of management.
3. Women college students have no influence in their locus of control based on their community.

EDUCATIONAL IMPLICATIONS

The present investigation which aimed at studying the locus of control of women college students revealed some interesting facts. The findings of the study have certain implications in improving locus of control of women college students. The findings of this study showed that women college students have influence in their locus of control based on their religion, order of birth, locality and type of management and they have no influence in their locus of control based on their community. Internally oriented women college students are more active when compared to externally oriented women college students. So measures should be taken to develop internal locus of control of women college students.

SUGGESTIONS FOR IMPROVING INTERNAL LOCUS OF CONTROL

Following measures can be taken to improve internal locus of control among the college students through attribute training.

1. Attribution training should be provided for the improvement of internal locus of control and task persistence.
2. A teacher can change the external students to internals by counselling and motivation.
3. Students should be taught to believe in their own ability so that they can achive autonomy in life.

CONCLUSION

The study revealed that the women college students have moderate level of locus of control based on their personal variable. Religion and order of birth have influence in their locus of control of women college students. Community has no influence in their locus of control of women college students.Following problems are suggested for the further study. A study can be conducted to find out the factors determines locus of control.

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Leadership Development Through Experiential Learning

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ABSTRACT

Experiential learning aims at bridging the gap between the classroom and the real world. It enables the student to bring out his innate potential to face the present day realities in which he lives. It also helps to develop variety of skills such as social, psychological and intellectual aspects. Leadership is one of the prime constructs that happen within the student through experiential learning process. An attempt is made here to suggest a design for leadership development through experiential learning.

INTRODUCTION

Education is the main process of making an individual efficient in dealing with the challenges of life and learning is the scientific process of acquiring skills and potentialities through valuable experiences. Effective learning is possible only through the chaining of better learning experiences and their experiential learning plays a main role in shaping an individual to be a better responsible citizen and an active member of society. Better learning opens our mind and expands our horizons, which plays a crucial role in shaping us to be good and responsible personalities. Experiential learning is really cultivating a lot of values among the learners and through that they can develop a lot of leadership qualities like hard work, dedication, self-confidence, and sharing. Leadership qualities are very essential for a democratic society and each individual should acquire better qualities of a good leader. Through experiential learning, we can easily develop these qualities in an effective manner. Traditional schooling views the teacher and text as experts and the learner as a passive recipient of that expertise. By contrast, experiential learning promotes involvement in the real world and defines the teacher's role as a facilitator of learning. The process of learning takes precedence over the behavioural outcomes, and is based on the premise that learning is a continuous process, with experience at its foundation.Better experiences can enrich and enlighten the entire aspects of that continuous activity to a great one.

EXPERIENTIAL LEARNING

An effective theory is the basis of systematic knowledge to do something in an attractive manner. Such a systematic and scientific approach can develop better perspectives of knowledge construction inside and outside the classroom. One of the prominent concepts in that direction is experiential learning which can generate better and fruitful interaction in the entire aspects of knowledge construction. Experiential Learning defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience". It is a process of constructing knowledge that involves a creative tension among the four learning modes. This process is portrayed as an idealized learning cycle or spiral

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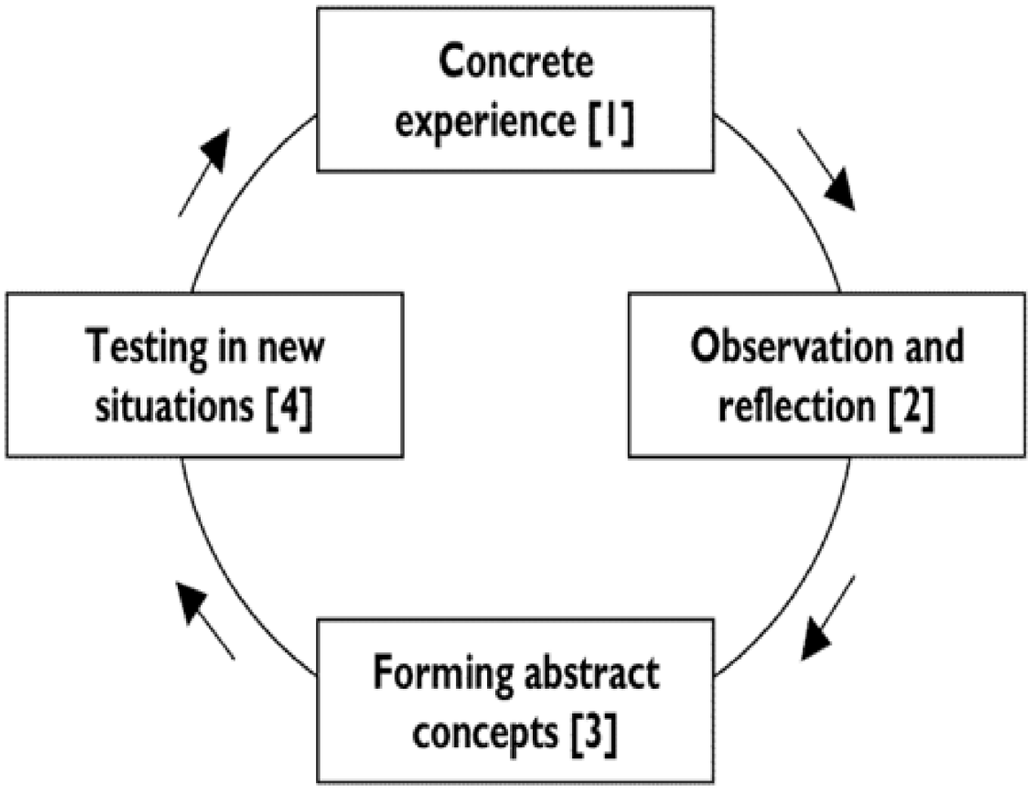
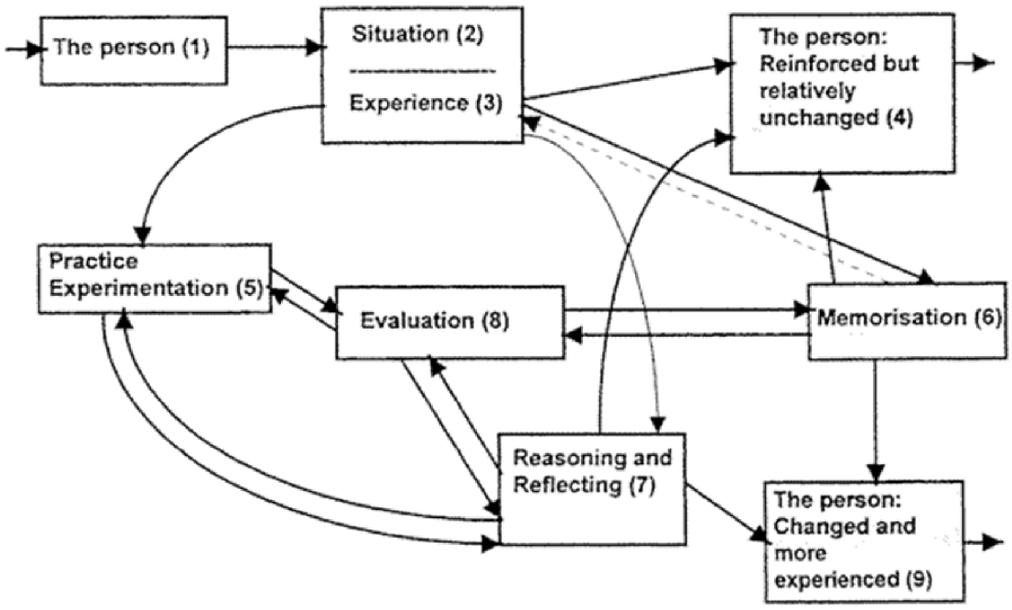
where the learner "touches all the bases" experiencing, reflecting, thinking, and acting in a recursive process that is responsive to the learning situation and what is being learned. Experiential learning posits that learning as the major determinant of human development and how individuals learn shapes the course of their personal development.

Kolb's (1984) formulation of Experiential Learning draws on the works of prominent educational and organizational scholars including John Dewey, Kurt Lewin, and Jean Piaget, who share the common view that learning involves integrating experience with concepts and linking observations to actions**.** Experiential education, or "learning by doing," is the process of actively engaging students in an authentic experience that has benefits and consequences. Students make discoveries and experiment with knowledge themselves, instead of hearing or reading about the experiences of others. Students also reflect on their experiences, thus developing new skills, attitudes, and ways of thinking and experiential education empowers students to take responsibility for their own learning. The following model on experiential learning (kolb) helps one to learn from his/her experiences.



Kolb's four-stage learning cycle shows how experience is translated through reflection into concepts, which in turn are used as guides for active experimentation and the choice of new experiences. The first stage, concrete experience (CE), is where the learner actively experiences an activity such as a laboratory session or field work. The second stage, reflective observation (RO), is when the learner consciously reflects back on that experience. The third stage, abstract conceptualization (AC), is where the learner attempts to conceptualize a theory or model of what is observed. The fourth stage, active experimentation (AE), is where the learner is trying to plan how to test a model or theory or plan for a forthcoming experience.

Jarvis,(1987,1995) another important educational thinker, strengthening the concept of experiential learning set out to show that there are a number of responses to the potential learning situation. He used Kolb's model with a number of different adult groups and asked them to explore it based on their own experience of learning. He was then able to develop a model which allowed different routes. Some of these are non-learning, some non-reflective learning, and some reflective learning.



Jarvis' contribution in this field made some complication and constraints about the concept of experiential learning. But his innovative efforts are really valuable in developing the potentialities of experiential learning concepts.

LEADERSHIP DEVELOPMENT BASED ON EXPERIENTIAL LEARNING

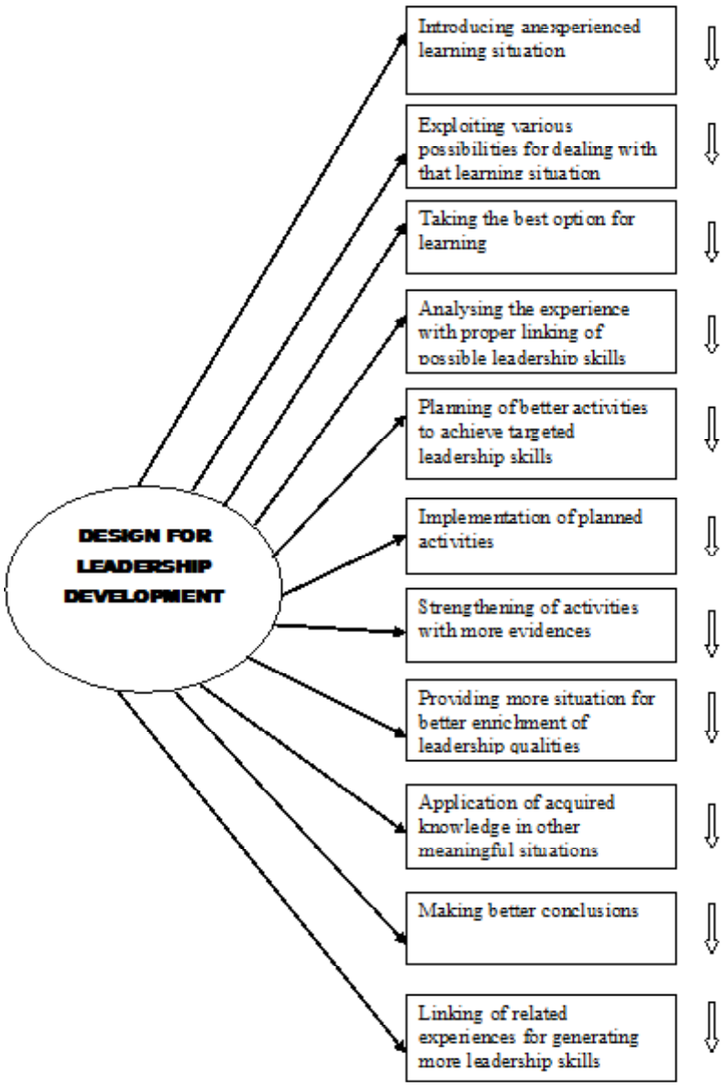
Leadership development is highly a personal learning experience, providing new insights into one's strengths as a leader as well as the key areas to work on for further development. The respective input, skill and responsibilities of a facilitator in this learning process have the potential to make the leadership development intervention a relevant and lasting experience.

Good leaders never cease to learn and taking personal responsibility for one's own learning remains a central tenet in any personal development initiative. In the current milieu of diversity, complexities and international competition, leaders who are capable of understanding, functioning and managing in the global environment are a valuable ,rare, and inimitable resource that can offer firms a competitive advantage. The growing emphasis on experiential approaches to global leader development may be attributed to the importance accrued to international experience. Challenging work experiences put individuals in dynamic settings where they must solve complex problems and make choices under conditions of risk and uncertainty. The developmental value of experience is well documented across a variety of theoretical perspectives and empirical studies.

In making leadership development training effective, it should also combine experiential classroom style programs and business school style coursework. It should also include reflective journaling, executive coaching as well as continuous mentoring. It should also involve goal setting that should follow an assessment of key developmental needs. An effective leadership development training should have not only the component of experiential learning but should also focus on self-efficacy which include the right tra

visioning which aims to develop the ability of the leader to formulate a clear image. This image should reflect the aspired future of the organization based on skills of the leader who heads it. To ensure the success of leadership development training, an effective program is needed. It should be designed in such a way that it integrates a range of developmental experiences over a given period of time. The program should also include monitoring scheme and gathering of feedback.

Design for developing leadership quality through experiential learning



ACTIVITIES RELATED TO LEADERSHIP DEVELOPMENT THROUGH EXPERIENTIAL LEARNING

A series of activities are suggested for experiential learning and all these activities really focus the learner participation up to higher level. Experiential learning is a learner centered and activity- oriented learning strategy. The learners are really dominating the entire proceedings of learning process. Experiential learning is paving better ways of inter and intra personal communicative situations inside and outside the classroom. Better communication skills can be developed through better sequencing of experiential learning activities.

Powerful and deep experiences with emotional backup can cultivate a lot of values and skills among the learners. Conducting role play is an excellent example of experiential learning and through its activities, communication skills as well as linguistic and logical intelligence of learners can be strengthened. Dramatization of textual activities is another important way of experiential learning. Through dramatization, a lot of abilities will improve which include organizational capacity, bodily and kinesthetic intelligence, linguistic intelligence and logical thinking. The creative skills also develop to a higher level with the impact of these activities. Conducting seminars, debates and discussions are also a part of experiential learning. These activities are also very helpful in generating more knowledge and better outlook towards future.

Lecturing and simulation are also considered as another important ways of experiential learning. All these activities are helpful in developing leadership skills of the learners. The ability to make better decisions, the capacity to plan and implement programs, knowledge of facts, motivation and organizing abilities can also be empowered through experiential learning.

Better case studies, conducting research type projects, inquiry learning type activities, experiences through simple and higher level experiments, making better observations, making better analysis and decisions are other types of experiential learning activities. Field trips, interviews, experiences through audio-visual technology. are other ways of getting knowledge through experiential learning. All these activities can help in developing leadership quality and self-confidence in the learner. Integrity, dedication, magnanimity, humility, openness and assertiveness are the important skills of leadership. Through experiential learning, these skills can be generated among the learners in an attractive manner. Sympathy and empathy are also the other qualities of a leader which can also be charged through experiential learning.

CONCLUSION

Experiential learning thus is the one of the most striking ways of learning. This process is enriched with a lot of personal involvement and it is a learner-initiated one. Through this process, there is enough provision for self-evaluation of the learner which is one of the most important psychological and philosophical activities for individual development. The social acceptance of an individual is very important in a democratic society. Better sharing of emotional feeling and thoughts are also helpful in making a person a socially accepted individual. Experienced learning is primarily based upon direct confrontation with practical, social and personal or research problems .A well balanced integrated personality with wider perspective of values and ideologies is the jewelling goal of education which is really meant for creating a better society. Experiential learning can generate superb skills of leadership in a natural and coherent manner. Through this way of learning our class rooms becomes the nucleus of leadership training which is inevitable for a democratic, cultural and progressive society.

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Sabha Mutt System of Education in Kerala

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ABSTRACT

The State of Kerala stands in the forefront of all the Indian states in the matter of literacy and education. The unique position which Kerala has attained in the educational map of India is not the result of a sudden spurt of activity in the field of education, but the climax of the early days on the intellectual pursuits of the people spread over several centuries. We can't object that, "the progress of higher learning purely depended on the Salais and Subha Mutts the early temple Universities." Even though they concentrated the higher strata of the society, they provided proper channel of education. The primary objective of this paper is to highlight the Sabha Mutt system of education in Kerala and its significance in the educational sector.

INTRODUCTION

Kerala, like other parts of India, had a traditional educational system which had both primary and higher educational facilities, Higher education, especially in the Vedas was essentially an exclusive preserve of the higher castes, particularly the Brahmins in Medieval Kerala Society. Temples were the centres of all cultural activities after the 8th century, and naturally educational institutions formed part of temple establishments. There were schools and colleges in all important temples of Kerala. In certain places there were post graduate institutions to impart higher education in special subjects. The educational institutions attached to the temples were known as Salais. These were endowed Schools of a residential type, where scholars received free tuition as well as free boarding and lodging, clothing and other amenities till they completed their studies. Though the early *Salais* disappeared from the scene, a fresh chain of educational institutions sprang up and flourished in Kerala in the early medieval period. They are the *Sabha Mutts* which too, like the *Salais* were temple universities.

SABHA MUTTS

The Sabha Mutts were established with in the precincts of temples. These institutions were functioned mainly central and northern Kerala. Eapen (1971) quoted in his book 'A Study of Kerala History' that, "There were eighteen *Sabha Mutts* at one time, though do not know the exact location of all these institutions. Among the earliest *Sabha Mutts* are those founded at Trichur by Sankaracharya." Chovannur, Kumbalam and Tirunavai also had Sabha Mutts. The Chovannur Sabha Mutt was renowned all over Kerala. The Kumbalam Sabha Mutt known as the Udayatungeswarathu Panditha Sabha. The Vedic Mutt of Tirunavai was famous and richly endowed by the Zamorins of Calicut. The head of the Tirunavai Sabha Mutt was the hereditary family teacher of the Zomarin (Menon, 2003). There were several Sabha Mutts functioned in important centers of Travancore also. Sivagiri Mutt, Attingul Mutt, Chirankeel Mutt, Theki Mutt were the important mutts in Travancore. Sivagiri Mutt was established by Sree Narayana Guru (1856-1928), a spiritual leader and social reformer of Kerala. It is also the headquarters of Sree Narayana Dharma Paripalana Sangam (Menon, 1933).

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. TYPES OF SABHA MUTTS

The famous *Sabha Mutts* were divided into three types. They were Karma *Sabha Mutts*, *Sastra Sabha Mutts*, and *Sanyasa Sabha Mutts*. The earliest of them, the *Sanyasa Sabha Mutt* was founded at Trichur by the great Advaita Philosopher, Sankaracharya in the AD 788-820. It consisted of the Vadakke Madham, Naduvil Madham, Edayil Madham and Thekke Madham. Advita Vedanta was taught in these madhams. It is believed that Sri. Sankara himself established Vadakke Madham (Antony, 1994). From the days of Sankara these Mutts were richly endowed with funds by successive generations of disciples and they played an important role in the promotion of Vedic studies (Menon, 1985).

CURRICULUM AND METHODS

The *Sabha Mutts* imparted education to the Namboothiri youths in the Vedas and the Sastras in conformity with the Gurukula ideal. The system of education evolved in the Sabha Mutts aimed at the moral, intellectual and physical well-being of the pupils. The Sabha Mutts offered education in different branches of study. To achieve the objectives of education, they adopted a definite curriculum. As education during this period was based on religion, study of religious literature got top priority in the syllabus and hence, Vedic study became an integral part of the curriculum. Hence the Sabha Mutts were known as Vedic schools for higher learning. Next to Vedic study, mimamsa (philosophy), vyakarna (grammar), purans and law formed part and parcel of the curriculum. Karma Sabha Mutts also taught Magic verse, reproduction and somayagam. Sastras and Philosophies were taught in Sastra Sabha Mutts. Saniyasa and rituals were taught in Saniyasa Sabha Mutts. It encouraged the life of saniyasa.

In the words of Padmanabha Menon (1933), "At these institutions the pupils are fed and lodged free of cost and give oral instruction in the Vedas, Sastras etc." The method of study pursued was such that the pupils and teachers looked more to the sharpening of the power of retentiveness than to the understanding of the subjects studied. To impart instruction was a duty enjoined by the Dharma Sastras, and wherever the Brahmins had congregated in large numbers schools of learning sprang up in which pandits gave instruction in the Vedas, vyakarna (Grammar) tarka (Logic), mimamsa (Philosophy) Law and Religion (Aiya, 1906).

EXAMINATIONS

Competitive examinations were occasionally held between the pupils of the two institutions which were feats of intellectual gymnastics serving more to test the memory of the pupils than their knowledge of the subject. They were made to repeat at random select portions from the Vedas which they have to do from the beginning to the end or vice versa, the candidates being in the meantime unmercifully badgered and interrupted by a batch of young men who take a special delight in thwarting the endeavours of the candidates to go through the passages correctly. Those who are able to withstand this badgering and succeed in repeating with exactitude the portions assigned to them are held in high estimations.

The Anyonyam was a proficiency test for students organized in the premises of the Sri Rama temple, Katavallur. Three proficiency tests were conducted in Katavallur. Students from all parts of Kerala came to Katavallur to participate in these tests. The most difficult test was called Katannirikkal (cross and sit). This was the most covetable distinction which any student could aspire for. The second among the Vedic students had to be satisfied with was Mumbirikkal (sitting in the front) and the average ones with Randam Varamirikkal (sitting in the second row).

Whereas the Katavallur *Anyonyam* was held to discover and reward the most gifted among the Vedic students, the Revati *Pattathanam* was a literary assembly held under royal patronage with

the object of honouring the most outstanding scholars from Kerala and from outside. The Zamorin of Calicut was the patron of this assembly, which was held in the premises of the Tali temple, Calicut, for a period of seven days. The title *Bhatta* and cash awards were conferred on scholars of the highest caliber. The assembly held its session in the roofed hall called *Vatilmadam*. Discussions on the respective subjects were held in front of four lighted lamps which represented *Bhatta Mimamsa, Prabhakara Mimamsa, Vyakarana* and Vedanta. On the day of the *Pattathanam Manget Achan*, the Chief of the Zamorin, read out the list of winners prepared by the judges and each of them received from the hands of the Zamorin the title of merit *Bhatta* and a cash award (*Kerala State Gazetteer*, 1986 & Menon, 2003).

TEACHERS OF SABHA MUTTS

The teachers recruited in the *Sabha Mutts* played a significant role in imparting education as well as moulding the character and personality of the students. Teachers were called as *Adhyapaka, Upadhyaya, Pardhapaka, Guru* and *Acharya* in ancient period. The appointment of teacher was governed by certain conditions and qualifications. As a Brahminical institution, it is believed that the teachers too were recruited from that community only. Apart from these conditions, mastery over the concerned subjects was the desirable qualification. A teacher of Veda should have thorough knowledge of the Veda and their commentaries. A grammar teacher should be able to teach elementary grammar and mastery and fluency in the concerned languages, especially Sanskrit. For different subjects, separate teachers too were posted. The teachers of the *Sabha Mutts* followed certain techniques for effective teaching and learning. The method of oral teaching and learning texts by heart were followed in the *Sabha Mutts* for generations together. In recognition of the service, the teachers were paid in the form of land (known as *vritti*) kind and cash (Panikkar, 1964).

ADMISSION IN THE SABHA MUTTS

The *Sabha Mutts* imparted education to the *Namboothiri* youths (Menon, 1979). The *Sabha Mutts* prescribed certain basic qualifications for admission. The students who sought admission should be a Brahmin by birth. Even among the Brahmins, priority was given to *Nambuthiri* Brahmins. Not only admission was denied to the people of other castes, but also caste alone decided admission.

DUTIES AND RESPONSIBILITIES

The students during the course of study were entrusted with certain duties and responsibilities. The students admitted were supported to adhere to the rules and regulations prescribed by Sabha Mutts strictly. They were required to look after the land of the Sabha Mutts and temples. They were empowered to look after the proper conduct and worship in temples and occasionally extended their helping hand to the needy people as per the orders of Sabha. They were prohibited carrying with them any offensive weapons of warfare to the meeting places especially in assemblies. To develop characters Students should not practice any kind of deceit (Gurumathy, 1979 & Mitra, 1964).

RULES AND REGULATIONS

The Sabha Mutts enforced their rules and regulations strictly and were known for discipline and integrity. Those who violated the terms and conditions prescribed by the Sabha Mutts were punished then and there according to the severity of the offences. As the Sabha Mutts were residential institutions, the students had to stay compulsorily at the hostels attached to them. They were supplied with the required articles like mats for sleeping, oil for their heads and night lamps. The hospitals and libraries attached to the temple offered them the needed medical aid and easy reference of books (Menon, 1933 & Ramachandran, 1987).

CONCLUSION

This was an interesting and important higher learning temple institution, which gave systematic education to the people of the early centuries with dynamic curriculum. Strict discipline also maintained among the students. Teachers were respected both by the students and parents. They were the models even to the modern educational institutions. Those who got admission to the Sabha Mutts could complete their study without paying for their boarding, dodging or tuition. Even though they provided good education the common people were not allowed to make use of the Sabha Mutts.

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