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Dear Esteemed Readers and Well Wishers!

Wish you Happy New Year 2020!

On behalf of Edureach, we would like to wish all authors and readers a wonderful and prosperous new year 2020.

It is our great pleasure and gratitude that we release this issue with blessings of our honorary founder secretary, Kulapathy Shri. A.P.C.Veerabahu. We express our sincere thanks to the faculty members, research scholars and academicians who are committed to the core of education for extending their generous heart in encouraging and motivating our team in bringing out this journal.

We shall assure all our readers that our consistent efforts will be aimed towards increasing the visibility, impact, editorial cycle time, citations and the overall quality of our journal. We, verymuch, look forward for strengthening the reputation of our publication and we want to attract higher quality submission of articles. We hope our readers and well-wishers share a similar vision and we look forward to a protective, challenging and successful 2020 year ahead. In the spirit of continuous improvement, any constructive input on streamlining process is welcome.

We would like to bring to your notice that personal and institutional stress, tension and depression are the major problems in the contemporary scenario. The faculty members and students in teacher educational institutions are also in the grip of these psychological imbalances. The committed faculty members and students are needed for any institution to function effectively. However, the academic fraternity is facing mental unrest due to professional demands, lack of resources, challenging work, improper strategies, non-conducive climate and various academic & administrative duties and responsibilities.

The progress of the nation highly depends on the happiness of the teachers and well-being of students. It is the need of the hour that teacher education institution should prepare happy and healthy personality of faculty members, who are physically enduring, emotionally matured, intellectually enlightened, aesthetically developed, morally oriented and spiritually sound, by providing adequate learning resources, proper learning strategies and conducive environment.

Keeping this in mind, this issue is brought out with mental health, learning resources, teaching strategies and skills and environment related studies.

With Regards,

Editorial Board

MENTAL HEALTH OF PROSPECTIVE TEACHERS

***Dr. S. Guru Vasuki and **Dr. T. Kanakaraj**

Abstract

This study examined the mental health of prospective teachers with respect to their age and gender. The population for the study consisted of 320 prospective teachers selected from 4 B.Ed. colleges in and around Thoothukudi. The results indicated that there is no significant difference in the mental health of prospective teachers in Thoothukudi area in terms of the demographic variables age, marital status, type of family and nature of institution, educational qualification, birth order, education of father, education of mother and monthly income of family. But there is significant difference in Mental Health of prospective teachers with respect to Gender, Discipline and Receiving Guidance in Thoothukudi area.

Key Words : *Mental Health, Life Skill Training, Prospective Teachers*

Introduction

Mental health is a term used to describe either a level of cognitive or emotional well-being or an absence of a mental disorder. From perspectives of the discipline of positive psycho logy, mental health may include an individual's ability to create a better life and procure a balance between life activities and efforts to achieve psychological resilience. According to World Health Organization (2004) mental health is a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community. Mental health is socially constructed and socially defined; that is different professions, communities, societies and cultures have very different ways of conceptualizing its nature and causes, determining what is mentally healthy, and deciding what interventions are appropriate. According to Chris Lloyd, et.al. (2006), there was a significant impact on the roles and skills required by the mental health workforce in the context of today's mental health services climate. So understanding and realizing the importance of mental health is the need of the hour for prospective teachers undergoing B.Ed. course.

Need for the Study

As important as physical health is our mental health which is typically looked at in our talks through the medium of topics like dealing with anger and aggression, managing our emotions, emotional intelligence and coping with stress which is aimed at helping individuals achieve a sense of achievement and satisfaction. Two of the most common problems faced by people, coping with depression and anxiety are discussed in the light of learning how to manage moods, coping with anxieties and concerns, role that families can play in helping individuals come out of these problems. Relationships form a significant part of every individuals life and these include not just romantic relations but also relations with friends and family. Learning balances work and life relationship with effective communication, self esteem with social growth. Moreover the complete man, who is physically enduring, emotionally making, intellectually enlightened, aesthetically developed, morally executed and mentally alert only can contribute in a very practical way to human development and betterment. Now a days mental health for each and every individual is essential, especially for prospective teachers, because they are going with the students – the future pillars of the nation. Hence the study of prospective teachers is an important business, the investigator is interested to find out the mental health and emotional intelligence of prospective teachers in Thoothukudi area.

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Objectives of the Study

1. To find out the differences, if any, in the mental health of prospective teachers in Thoothukudi area in terms of demographic variables namely age, gender, marital status, type of family and nature of institution.
2. To find out the differences, if any, among the mental health of prospective teachers in Thoothukudi area in terms of demographic variables namely educational qualification, birth order, discipline, education of father, education of mother, monthly income of family and receiving guidance.

Method used in the Study

The investigator adopted survey method. This method of investigation attempts to describe and interpret what exists at present in the form of conditions practices, process, trends, effects, beliefs etc. The survey method gathers data from relatively large number of case at a particular time.

Sample

The method of sampling is based on the nature of the problem, size of the universe, availability of finance, item and personal. The sample for the present study consists of 320 prospective teachers studying in the Colleges of Education in Thoothukudi area.

Tool Used

To measure the mental health of the prospective teachers, the investigator used the Mental Health Inventory (MHI) developed and standardized by Jegadish and A.K.Srivastava (1997) and modified by the investigator and guide. It has the following dimensions: Self Evaluation, Realistic Perception, Inferior Attitude, Autonomy, Environmental Mastery and Positive Attitude. Reliability was established by test-retest method and its value is 0.76. High content validity was established.

Procedures

The above inventory was administered to prospective teachers undergoing B.Ed. one year course. Each item was scored with the help of scoring key. The data thus collected are tabulated to arrive at meaningful inference.

Analysis of Data

To find out the meaningful interpretation of the raw scores the data were analysed, the results of the study are presented in the following tables.

Table 1 : Significant Difference in the Mental Health of Prospective Teachers in Thoothukudi area in terms of Demographic Variables

Category	Demogrphic variable	No	Mean	SD	't' value		Remarks
					Cal.	Tab.	
Age	Below 25 years	228	151.754	19.174	1.387	1.96	NS
	Above 25 years	92	148.391	19.813			
Gender	Male	49	145.490	17.783	2.231	1.96	S
	Female	271	151.745	19.548			
Marital Status	Married	82	153.415	20.544	1.396	1.96	NS
	Unmarried	238	149.882	18.932			
Type of family	Nuclear	236	151.436	19.067	0.975	1.96	NS
	Joint	84	148.964	20.266			
Nature of Institution	Aided	160	150.556	19.510	0.213	1.96	NS
	Unaided	160	151.019	19.326			

It is therefore inferred that there is no significant difference in the Mental Health of prospective teachers in Thoothukudi area in terms of the demographic variables namely age, marital status, type of family and nature of institution, but there is significant difference in Gender.

Table 2 : Significant Difference among the Mental Health of Prospective Teachers in Thoothukudi area in terms of Demographic Variables.

Category	Source of Variance	df	Sum of Squares	Mean Square Variance	'F' value		Rem-arks
					Cal.	Tab.	
Educational Qualification	Between	2	1194.50	597.250	1.584	3.030	NS
	Within	317	119479.00	376.905			
Birth Order	Between	4	689.50	171.625	0.450	2.400	NS
	Within	315	119987.00	380.911			
Disci-pline	Between	5	15579.50	3115.900	9.309	2.240	S
	Within	314	105094.00	334.694			
Education of Father	Between	2	87.50	43.750	0.115	3.030	NS
	Within	317	120586.00	380.398			
Education of Mother	Between	2	1298.50	649.250	1.724	3.030	NS
	Within	317	119375.00	376.577			
Monthly Income of Family	Between	2	1091.50	545.750	1.446	3.030	NS
	Within	317	119582.00	377.230			
Recei-ving Guidance	Between	4	5042.00	1260.500	3.387	2.400	S
	Within	635	236305.00	372.134			

The above table shows that the variables educational qualification, birth order, education of father, education of mother and monthly income of family have no impact on mental health of prospective teachers. But there is significant difference in discipline and receiving guidance in mental health of prospective teachers in Thoothukudi area.

There is significant difference in the mental health of prospective teachers in Thoothukudi area in terms of the demographic variable gender. This study agrees with the study of Rani, A.V.M. (2007). There is significant correlation between age above 25 years of prospective teachers in their mental health and there is significant correlation between mental health and emotional intelligence of prospective teachers with respect to their discipline of Biological Science.

Findings

This finding showed that affective domain of behavior is of paramount importance for the mental health of an individual. Mental Health of prospective teachers helps them to make adjustments during teaching-learning process and their learning experience is also playing vital role. To overcome stress healthy brain that is mental health is essential. Mental health manages emotions in a proper way. Especially for prospective teachers both Mental Health and Emotional Intelligence are prominent one. Findings of this study help the prospective teachers to sensitize the need, importance and significance of mental health and creating healthy mind and environment by enhancing positive attitude, doing our duties and responsibilities properly, respect elders, law, social order, culture, tradition and ethics for the welfare of prospective teachers leads to societal develop ment.

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Conclusion

Mental health can affect daily life, relation ships, and even physical health. Mental health also includes a person's ability to enjoy life - to attain a balance between life activities and efforts to achieve psychological resilience. Mental health influences how we think, feel, and behave in daily life. It also affects our ability to cope with stress, overcome challenges, build relationships, and recover from life's setbacks and hardships. Mental health includes our physical, emotional, psychological, moral, spiritual and social well-being. For prospective teachers, mental health is essential to lead a happy and healthy life personally and professionally.

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SATISFACTION TOWARDS EDUCATIONAL INFORMATION ON PUBLIC LIBRARIES

***Dr. G. Vijayalakshmi**

Abstract

Libraries are an integral part of society. Higher education is almost not possible without a qualitative library. The objective of the present study is to examine the satisfaction of using the library on educational information by the public library users. A sample of 300 respondents using public library was selected adopting simple random sampling technique. The findings of the study were that there was a significant difference in satisfaction of using the library on educational information among the public library users between male and female. There was no significant difference in satisfaction of using the library on educational information among the public library users between rural and urban areas. There was no significant difference in satisfaction of using the library on educational information among the public library users between married and unmarried users.

Keywords : *Educational Information, Gathering, Manipulating.*

Introduction

A large number of people turns to libraries to satisfy a desire for knowledge or to obtain material for some leisure time activity. Also, many people enjoy reading books, news of the world, of the nation, of the region, and of the locality that is provided by their local library. Information is the result of processing, gathering, manipulating and organising data in a way that adds to the knowledge of the receiver.

It is undoubtedly recognised that information is a vital resource. Information is an indispensable raw material for the right decision-making from the governmental and institutional levels to the personal level. It is, in fact, a vital ingredient for the social develop ment of any nation, especially developing countries like India. It is a well-accepted generalisation that a country, which is rich in information, is rich in the socio-economic spheres.

Wilson (1981) has discussed in his study that information-seeking behaviour results from the recognition of some need, perceived by the user. Kuhlthau's (1992) model of the information-seeking process is an approach. Her model delivers a theoretical framework for information seeking. This model is essential as it is one of the few models that are based on actual formal research. Kuhlthau (1992) developed a model of the evidence search process from common forms which emerged from her longitudinal investigation of high school students' information-seeking behaviours. Her model includes the development of thoughts about a research topic, the feelings related to the search process, and the actions of pursuing and using sources.

Dutt (1993) has found that detailed requirements of the specific information services can be identified only after a thorough analysis of the user needs and present the information-seeking behaviour of the community, the user surveys for assessment of user needs may be said to be indispensable for the effective and efficient utilisation of information system and services. Ellis (1993) analysed the information-seeking behaviour among social scientists then discussed the use of electronic communication through an electronic database and computer-based information online search.

Satyanarayana (1997), in his findings, reports that information is a powerful instrument in society, and it is a large part in improving the

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quality of life for individuals. The library should become a source of information for decision making and socio-economic developments. Each community requires library services tailored to individual needs. The support co-operation of the community is one of the essential facts to develop the libraries as an active community for their information needs.

Breivik, Patricia (1998) made an in-depth examination of resource-based learning as an essential new example of higher education. This notion shifts the focus from teaching to learning by requiring students to select their learning materials from real-world information resources. Hepworth, Mark (1999) concerns the inclusion of information literacy and skills training in the undergraduate curriculum. In general, it was established that students had limited talents in the area of information literacy. Based on these findings, recommendations were projected to help develop information literacy and skills and incorporate their delivery in the university curriculum.

Significance of the study

There is a necessity to make a useful and practical distinction by defining knowledge and information. Information is an essential element for the progress of higher education. There are terms of information namely knowledge, facts, data, news and message. The implicit assumption of user studies, behaviour studies and information flow studies is that if one understands user needs and problems; one can design effective information systems.

It is essential to examine information-seeking models as what students do when searching information may be very dissimilar from what librarians think the students do. Theoretical models of info seeking, including both those based on empirical research and reflection on experience, can assist librarians in creating library and information skills curriculum which respond directly to the students' requirements.

Attempting to fit a prospectus to the students' processes is a better approach than to change the students' processes and policies to fit the curriculum. This plan, for example, has been used in the field of literacy. Researchers and teachers inspected, both empirically and qualitatively, the procedures and strategies that young children use when learning to read. These tactics and processes were used to create an early literacy curriculum which respond directly to the requirements of the learners.

Understanding the process of information pursuing can help answer questions such as: what should the library and information skills curriculum cover; what specific skills and processes should be trained; what are the appropriate teaching systems; and what is the relationship of the library and information skills curriculum to the academic prospectus. Examining the plans, procedures, successes and failures that students use and experience when searching for information, can grow into a library and information skills curriculum which guide the students towards information literacy.

The apparent need will lead the user to search for information, making demands upon an assortment of information sources. These information bases include information systems (university libraries and public libraries); human resources (experts, professors, colleagues); and other resources (personal library, media). Informa tion seeking behaviour may lead to either success or failure. If successful, information is positioned, which will be used. This may conse quence in the satisfaction or non-satisfaction of the perceived initially need. Satisfaction arises when the located information has been analysed and satisfies the original need.

Objectives

1. To find out the substantial differencebetween male and female public library users in their satisfaction of using the library on educational information.

2. To find out the substantial differencebetween rural and urban public library users in their satisfaction of using the library on educational information.
3. To find out the substantial difference between married and unmarried public library users in their satisfaction of using the library on educational information.

Methodology

The present study is based on primary data sources. It is both descriptive and analytical. The primary data is collected from 300 public library users in Thoothukudi District of Tamil Nadu by using interview schedules. The investigator has used simple random sampling method. The final structure of the interview schedule was framed after the pre-test and pilot study. The investigator has developed and used Kuhlthau's (1992) model of information-seeking behaviours.

Data Analyses

Table 1 : Difference between male and female public library users in their satisfaction of educational information.

Variable	Category	N	Mean	S.D	Calculated 't' Value	Remarks
Gender	Male	203	67.01	11.93	2.84	S
	Female	97	43.34	7.34		

Table 1 reveals that there is a substantial difference between male and female public library users in their satisfaction of using the library on educational information. While comparing the mean scores of male (67.01) and female (43.34) public library users in their satisfaction of using the library on educational information, the male respondents are better than the female respon -dents.

In order to find out the substantial diffe rence in satisfaction of using the library on educational information among the public library users based on gender, the't' value was calculated, and the calculated't' value was found to be 2.84 which is higher than the table value 1.96 which is significant at 0.05 level. Therefore the null hypothesis is not recognised and concluded that there is a significant difference in satisfaction of using the library on educational information among the public library users between male and female.

Table 2 : Difference between rural and urban public library users in their satisfaction of educational information.

Variable	Category	N	Mean	S.D	Calculated 't' Value	Remarks
Locality	Rural	115	40.82	5.72	0.41	NS
	Urban	185	57.38	9.14		

Table 2 reveals that there is no substantial difference between rural and urban public library users in their satisfaction of using the library on educational information. While comparing the mean scores of rural (40.82) and female (57.38) public library users in their satisfaction of using the library on educational information, the urban respondents are better than the rural respondents.

In order to find out the substantial difference in satisfaction of using library on educational information among the public library users based on rural and urban area, the't' value was calculated, and the calculated't' value was found to be 0.41 which is lower than the table value 1.96 which is not momentous at 0.05 level. Therefore the null hypothesis is accepted and concluded that there is no significant difference in satisfaction of using the library on educational information among the public library users between rural and urban areas.

Table 3 : Difference between married and unmarried public library users in their satis faction of educational information.

Variable	Category	N	Mean	S.D	Calculated 't' Value	Remarks
Marital Status	Married	59	36.77	4.82	1.22	NS
	Unmarried	241	71.24	18.05		

Table 3 reveals that there is no substantial difference between married and unmarried public library users in their satisfaction of using the library on educational information. While com paring the mean scores of married (36.77) and unmarried (71.24) public library users in their satisfaction of using the library on educational

information, the unmarried respondents are better than the married respondents.

In order to find out the substantial difference in satisfaction of using the library on educational information among the public library users based on married and unmarried, the't' value was calculated, and the calculated't' value was found to be 1.22 which is lower than the table value 1.96 which is not momentous at 0.05 level. Therefore the null hypothesis is accepted and concluded that there is no significant difference in satisfaction of using the library on educational information among the public library users between marital positions.

Findings

1. There is a significant difference in satisfaction of using the library on educational information among the public library users between male and female.
2. There is no significant difference in satisfac tion of using the library on educational information among the public library users between rural and urban areas.
3. There is no significant difference in satisfac tion of using the library on educational infor mation among the public library users between marital positions.

Educational implications

i) Academic librarians can implement a library and information skills curriculum, which interacts and responds to the academic curriculum.

ii) Academic librarians need to reveal how to provide integrated information and library skills curriculum best.

iii) There seems to be enormous scope for further improvements in terms of technology and facilities.

iv) The recent developments in the field of modernisation should be made known to the public and have become fundamentally imperative in this dynamic branch of explora tion of truth.

Conclusion

Academic libraries spend many amounts every year on the collection of information sources in order to meet the user's requirements. In order to enlarge the use of library resources, every library should build up their resources keeping in mind the users need and should plan library with altering information environment. The study suggested that the library should carry out user studies at regular intervals in order to identify user's information necessities and their information collecting behaviours. The infrastructure facilities, information sources, and services of the public library can be advanced and developed from time to time.

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ENVIRONMENTAL AWARENESS OF HIGH SCHOOL STUDENTS

***A. Kavitha **Dr.R.Sasipriya**

Abstract

According to Rao (1983) the environment is the sum of all physical, chemical, biological and sociological features which compare surroundings of man. The investigator intends to study the environmental awareness of high school students. The investigator reviewed 28 studies for environmental awareness and critically analysed the related studies. The population for this study consisted of all high school students studying in Thoothukudi and 300 high school students selected as sample by using stratified random sampling technique. Survey method is adopted for the study. The investigator developed and validated a Environmental awareness scale (2018). The environmental awareness scale included three dimensions namely environmental awareness at home, environmental awareness at school and environmental awareness at society The statistical techniques like percentage analysis, t- test and F- test were used. The investigator found that there is a significant difference between male and female high school students in their environmental awareness at society and there is a significant difference between rural and urban high school students in their environmental awareness at society and total environmental awareness.

***Keywords** : Environmental awareness, Environmental issues, High school students.*

Introduction

Nature is the mother of man. Living being's well being lie in the hands of nature, the environ ment around him/her. It's the duty of human kind to pass this wonderful environment and its resources to next generation. Almost care and consciousness towards environment is needed to preserve the natural resources and the environ ment around human kind. Recent researchers show that environment is in danger and proper concern is needed to overcome it. Caring about environment is taking actions to protect environment. Environmental awareness is referred as how an individual reacts in the surrounding around him/her and conservation towards nature.

Significance of the study

All things in this world are bright and beautiful and a thing of beauty is a joy forever. The environment around us has changed. Environment is a holistic view of the world as it functions at any point of time, with a multitude of spatial elemental and socio-economic systems distin guished by quality and attributes of space and mode of behaviour of physical and biological forms. The physical and biological components of the environment contribute and influence for social and economic development. Sometimes it has the adverse effect of social and economic growth and development.. Man wants to exploit all the non renewable natural resources. Man finds all possible ways to pollute land, water and air. And the waste produced by man is non-degradable and man is lethargic in managing the waste in a proper way. Further, the high school students are to be aware of the importance of our environment and in order to protect our environment

Human beings are interdependent to walk towards progress and future human being destroys nature the environment they reside in. Researchers and Ecologists predict, if man destroys nature continuously, after 2050 A.D. there would be no water and pure air to drink and breath. Our future generation would suffer much, if it happens. Nature is a gift of god and it's almost responsibility of each human being to

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preserve and conserve nature and to pass it to future gene ration. To preserve and conserve nature, everyone has to understand about the environ ment they live in. So it's good to have awareness and sound knowledge about environ ment. The world is in the hands of growing children. Adolescent age is not only a stage of stress and storm but also the age of exploring the world identifying themselves. So the investigator investi gated the "Environmental awareness of high school students".

Objectives

1. To find out the level of environmental awareness of high school students.
2. To find out whether there is any significant difference between male and female high school students in their environmental awareness and its dimensions home, school, and society.
3. To find out whether there is any significant difference between rural and urban high school students in their awareness and its dimensions home, school, and society.
4. To find out whether there is any significant difference among government, government aided and self financed high school students in their awareness and its dimensions home, school, and society.
5. To find out whether there is any significant difference among boys, girls and co-education high school students in their awareness and its dimensions home, school, and society.

Hypotheses

1. The level of environmental awareness of high school students is moderate.
2. There is no significant difference between male and female high school students in their environmental awareness and its dimensions home, school, and society.
3. There is no significant difference between rural and urban high school students in their environmental awareness and its dimensions home, school, and society.
4. There is no significant difference between government, government aided and self financed high school students in their environ mental awareness and its dimensions home, school, and society.
5. There is no significant difference between boys, girls and co- education high school students in their environmental awareness and its dimensions home, school, and society.

Methodology

Survey method was adopted for the study. The sample for the study was chosen on the basis of stratified random sampling technique. The stratification was done on the basics of gender, locality of the school, nature of the school and type of the school. The sample consisted of 300 high school students in Thoothukudi district. Environmental Awareness Scale (2018) developed and validated by Kavitha and Sasipriya was used. Percentage analysis, t- test and F- test were used for data analysis.

Data Analyses

Table 1 : Level of environmental awareness of high school students

Environmental Awareness	Low		Moderate		High	
	N	%	N	%	N	%
Home	145	48.3	110	36.7	45	15.0
School	48	16.0	200	66.7	52	17.3
Society	48	16.0	201	67.0	51	17.0
Total	48	16.0	203	67.7	49	16.3

Table 1 shows that 15.0%, 17.3%, 17.0% and 16.3% of the high school students have high level of environmental awareness at home, at school, at society and in total respectively.

Table 2 : Difference between male and female high school students in their Environmental Awareness

Environ mental awareness	Male (N= 143)		Female (N= 157)		Calculated 't' value	Remarks
	Mean	SD	Mean	SD		
Home	109.27	10.019	107.27	7.883	1.901	NS
School	70.69	10.846	72.17	9.657	1.243	NS
Society	66.81	8.397	63.79	8.699	3.060	S
Total	246.77	23.377	243.25	21.04	1.367	NS

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

Table 2 shows that there is no significant difference between male and female high school students in their environmental awareness at home, at school and in total. But there is significant difference between male and female high school students in their environmental awareness at society.

Table 3 : Difference between rural and urban students of high school students in their Environmental Awareness

Environmental awareness	Rural (N= 143)		Urban (N= 157)		Calculated 't' value	Remarks
	Mean	SD	Mean	SD		
Home	108.30	9.088	108.02	8.839	0.242	NS
School	70.98	10.606	72.73	9.214	1.414	NS
Society	64.10	8.607	68.13	8.208	3.765	S
Total	246.77	23.377	243.25	21.487	1.966	NS

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

Table 3 shows that there is no significant difference between rural and urban high school students in their environmental awareness at home and school. But there is significant difference between rural and urban high school students in their environmental awareness at society and in total.

Table 4 : Difference among boys, girls and co-education school of high school students in their Environmental Awareness.

Environ. Awareness	Source of Variance	Sum of Squares	df	Mean Square Variance	Calculated 'F' value	Remarks
Home	Between	314.807	2	157.404	1.953	NS
	Within	23931.229	297	80.577		
School	Between	536.600	2	268.300	2.580	NS
	Within	30880.067	297	103.973		
Society	Between	478.180	2	239.090	3.225	S
	Within	22020.950	297	74.145		
Total	Between	2139.358	2	1069.679	2.187	NS
	Within	145259.029	297	489.088		

(For 2,297 df, at 5% significance the table value of 'F' is 2.99)

Table 4 shows that there is no significant difference among boys, girls and co- education high school students in their environmental awareness at home, at school and in total. But there is significant difference among boys, girls and co- education high school students in their environmental awareness at society.

Table 5 : Difference among government, government aided and self financed school of high school students in their Environmental Awareness.

Environ. Awareness	Source of Variance	Sum of Squares	df	Mean Square Variance	Calculated 'F' value	Remarks
Home	Between	202.572	2	101.286	1.251	NS
	Within	24043.464	297	80.594		
School	Between	4782.136	2	2391.098	26.663	NS
	Within	26634.531	297	89.679		
Society	Between	1282.861	2	641.430	8.979	S
	Within	21816.269	297	71.435		
Total	Between	10243.894	2	5121.947	11.091	NS
	Within	137154.492	297	461.800		

(For 2,297 df, at 5% significance the table value of 'F' is 2.99)

Table 5 shows that there is no significant difference among government, government aided and self financed high school students in their environmental awareness at home. But there is significant difference among government, government aided and self financed high school students in their environmental awareness at school, at society and in total.

Findings and Interpretations

1. 15.0% of the high school students have high level of environmental awareness at home. 17.3% of the high school students have high level of environmental awareness at school. 17.0% of the high school students have high level of environmental awareness at society. 16.3% of the high school students have high level of environmental awareness respectively.
2. Significant difference exists between male and female high school students in their environ mental awareness at society. Here male students are better than the female students. This may be due to the fact that generally male are explosed to do field work rather than female students. And also they have more exposure in the society than female students.
3. Significant difference exists between rural and urban student of high school students in their environmental awareness at society and in total. Here urban students are better than the rural students. This may be due to the fact that urban students face many environmental problems than the rural students in loving with nature.

4. Significant difference exists among boys, girls and co-education school of high school students in their environmental awareness at society. Here boys high school students are better than the others. This may be due to the fact that high school students studying at boys school have more exposure from their teachers. Generally in boy's school, gardening works are done by the students.
5. Significant difference exists among government, government aided and self financed high school students in their environmental awareness at school, at society and in total. Here government high school students are better than the others. This may be due to the fact that the most of the government schools are located in rural areas. The students studying in government schools have various opportunities to live and enjoy nature.

Educational Implications

1. More cultural programs related to environment should be conducted for the development of environmental awareness among the students.
2. Curriculum developers should consider the inclusion of more knowledge on environment.
3. More seminars should be conducted on environmental awareness.
4. In this study, it's observed that urban students have more awareness than rural students. Government should take necessary steps and measures to motivate the students in rural areas.
5. The students should be motivated to participate in NSS, NCC, SUPW, SCOUT and guide, Red Cross for getting practical aspect of environmental awareness.
6. Eco friendly campus could be maintained and non-degradable things be banned.

Conclusion

Schools in education are organs of the nation's life which are ultimately responsible for the development of well integrated, all round, wholesome personalities, intelligence and values of their pupils physically, socially, morally, emotionally, personally and intellectually. They have to develop moral as well as national character. The role of students in fostering environmental awareness skill should in no way be underestimated. They have a magnificent role to play by making awareness and use of all opportunities in and out of the schools of education to develop the awareness about environ ment skill.

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The True Teachers are those who help us think for ourselves

- Sarvepalli Radhakrishnan

THE EFFECT OF GENERATIVE STUDY STRATEGIES ON PROSPECTIVE TEACHERS' READING COMPREHENSION

***P. Priya &** Dr. J. Josphine Saleth Mary**

Abstract

Reading skill provides support to prospective teachers with new learning ways and practices. The art of generative teaching is knowing how and when to facilitate the learner's construction of relations among the parts of the text and their knowledge. The aim of the study is to find the effect of generative study strategies of the prospective teachers' reading comprehension. Experimental method was adopted in this study. The sample consists of 60 prospective teachers with both male and female of summarization group, question-generation group and control group in Thoothukudi area. Simple random sampling technique was used. R.K.Narayanan's three short stories were selected as the material for the study. The statistical techniques used were mean, standard deviation and t-test. The findings were: there was no significant difference on the prospective teachers' reading comprehension achievement test of the three groups. But there was significant difference with respect to gender, locality and speaking of English among the groups.

Keywords : *Reading, summarization group, question-generation group, control group, generative strategies.*

Introduction

English is the universal language as it is used by million people across the globe. It serves to connect people of various regions and diverse backgrounds. The main aim of teaching of English is to help children acquire practical command of English, as it is an international language of science, technology, diplomacy, trade, civilization and culture. Among the four skills, reading occupies a special place. Reading is the process of using one's eyes and mind to understand the literal as well as the hidden meaning of what the writer was attempting to convey. Primitive man calls reading MAGIC. It includes Symbol, Sound, and Sense as its elements. Reading is the process of recognition, interpretation and perception of written or printed material. Comprehension is the understanding of the meaning of the written material and converse the conscious strategies that lead to under standing. The process of reading deals with language form, while compre hension deals with language content. Reading without comprehen sion is not reading at all. Compre hension and reading go hand in hand. Generative strategies are also learning strategies aimed to help the learner to integrate presented information with existing knowledge and experience.

Need for the study

Globalization in all the fields necessitates the learning of a language which is international. Undoubtedly, English has become a world language because the number of people who use English as a means of communication exceeds more than two centuries. Due to lack of sufficient exposure to the spoken mode of English in today's environment, from among the four major language skills – namely, understanding speech, speaking, reading and writing – reading has probably been recognized as the most important skill for English language learners in academic contexts. During a certain period in the history of language learning / teaching, a specific

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approach under the rubric of "reading approach" emerged which focused on reading as an important tool for language learning. Today, views on reading theory have changed so dramatically that reading is no longer seen as little more than reinforcement for oral language instruction.

Reading is an interactive skill; it is a process of active and intentional thinking in which meaning is constructed through interactions between the printed page and the reader. As comprehension is considered the essence of reading; one of the skills required of the reader is to better comprehend the content of a text, which would be recognizing the most important information in the text so that the reader would be able to summarize the text in their own words or be able to generate questions relevant to the more important points in the text. The key point is that new understanding of the information is created or generated by the learners. Generative learning activities must provide the students with an opportunity to mentally "Play with" information to create a personal understanding of the subject to be learned. Taking this in mind, the investigator took to analyze the effect of generative study strategies on prospective teachers' reading comprehension.

Objectives

1. To find out the effect of Summarization and Question-Generation as two generative study strategies on prospective teacher's reading comprehension achievement of literary prose texts.
2. To find out whether there is any significant difference on prospective teachers' reading comprehension achievement of literary prose texts with Summarization and Question-Generation as two generative study strategies.
3. To find out whether there is any significant difference on prospective teachers' reading comprehension achievement of literary prose texts with Summarization and Question-Generation as two generative study strategies with respect to Gender, Locality, Medium of instruction in school level, Medium of instruction in College Level, Speaking in English and Reading English story books

Methodology

In the present study the investigator used the experimental method. Experimentation is the most significantly sophisticated research method. Experimentation is the name given to the type of educational research in which the investigator controls the educative factor to which of students is subjected during the period of inquiry and observes the resulting achievements.

Population and Sample

The population for the present study was identified as the prospective teachers. Among the population, 60 prospective teachers were selected as sample. Simple random sampling technique was adopted by the investigator. The sample was selected from V.O.C. College of Education, Thoothukudi.

Tool

As part of the course material, R.K.Narayanan's three short stories were selected as the materials for the research project. The stories were selected after consulting with the panel of experts, in the field of English teaching for establishing its validity. Finally, R.K. Narayanan's "An Astrologer's day", "Father's help" and "Gateman's gift" were selected for investigation.

After separating the participants to three equal groups (each group consisting of 20 students of both males and females) – namely, the summarization group (A), the question-genera tion group (B) and the control group (C), the two experimental groups(i.e) the summarization (A) and the question–generation (B) groups were instructed by the investigator of how to perform their tasks. The investigator presented each of the short stories to the three groups separately. Then the summarization group was told to reduce each short story to a few sentences, merely including the major events and points of the story in their own words.

The question-generation group was instructed how to spot the major information in each short story and then generate questions addressing the major events, characters and

points included in the story. The control group was not asked to perform any special generative study strategy to deal with the stories. Reading comprehenstion test was used by the investigator.

Statistical Techniques

Mean, Standard Deviation and t-test were used for the study.

Data Analysis

Hypothesis 1 : *There is no effect of Summarization and Question - Generation as two generative study strategies on prospective teacher's reading comprehension achievement of literary prose texts on the three groups.*

Table 1: Results of the Reading Comprehension Achievement Test

Group	No.	Mean	SD
Summarization group	20	23.25	4.115
Question-generation group	20	22.85	4.107
Control group	20	21.75	3.918

From the above table the obtained mean scores indicated that the summarizers obtained a higher mean than the question-generation group, who in turn outperformed the control group.

Hypothesis 2 : *There is no significant difference on prospective teachers' reading comprehension achievement of literary prose texts with Summarization and Question-Generation as two generative study strategies.*

Table 2 : Difference in the Reading Comprehension Achievement Test of the three groups.

Source of variation	Sum of Squares	df	Mean square	F-Value	Table Value 5% Level	Remarks
Between groups	24.133	2	12.066	0.7363	3.150	NS
Within Groups	934.05	57	16.386			
Total	958.183	59				

It is inferred from the above table that there is no significant difference in the reading comprehension achievement test of the three groups.

Hypothesis 3a : *There is no significant difference on prospective teachers' reading comprehension achievement of literary prose texts with summarization and question generation as two generative study strategies with respect to Gender.*

Table 3a : Difference in the Reading Comprehension Achievement Test with respect to Gender.

Method	Category	No.	Mean	SD	CR Value	Table Value	Remarks
Summarization Group	Male	4	17.750	1.785	3.996	1.96	S
	Female	16	24.625	3.140			
Question Generation Group	Male	3	22.000	1.633	0.380	1.96	NS
	Female	17	23.000	4.270			
Control Group	Male	3	20.000	4.320	0.832	1.96	NS
	Female	17	22.059	3.638			

It is inferred from the above table that there is significant difference in the Summarization group for prospective teachers' reading comprehension achievement test with respect to gender. But there is no significant difference in the question-generation group and the control group.

Hypothesis 3b : *There is no significant difference in prospective teachers' reading comprehension achievement of literacy prose texts with summarization and question-generation as two generative study strategies with respect to locality.*

Table 3b : Difference in the Reading Comprehension Achievement Test with respect to Locality.

Method	Category	No.	Mean	SD	CR Value	Table Value	Remarks
Summarization Group	Rural	7	22.286	4.300	0.760	1.96	S
	Urban	13	23.769	3.745			
Question Generation Group	Rural	6	22.333	2.357	0.380	1.96	NS
	Urban	14	23.071	4.511			
Control Group	Rural	2	15.500	3.500	0.832	1.96	NS
	Urban	2	15.500	3.500			

It is inferred from the above table that there is significant difference in the Control group for prospective teachers' reading comprehension achievement test with respect to locality.

Hypothesis 3c : There is no significant difference on prospective teachers' reading comprehension achievement of literacy prose text with summari zation and question-generation as two generative study strategies with respect to Medium of Instruction in School level.

Table 3c : Difference in the Reading Compre hension Achievement Test with respect to Medium of Instruction in School level.

Method	Cate gory	No.	Mean	SD	CR Value	Table Value	Remarks
Summa-rization Group	English	11	24.182	4.300	1.128	1.96	NS
	Mother Tongue	9	22.111	4.581			
Question Generation Group	English	10	23.700	4.051	0.380	1.96	NS
	Mother Tongue	10	22.000	3.768			
Control Group	English	13	22.692	3.337	0.832	1.96	NS
	Mother Tongue	7	20.000	4.036			

It is inferred from the above table that there is no significant difference in the effect of the three groups for prospective teachers' reading comprehension achievement test with respect to medium of instruction in school level.

Hypothesis 3d : There is no significant difference on prospective teachers' reading comprehension achievement of literacy prose texts with summarization and Question-generation as two generative study strategies with respect to Medium of Instruction in college level.

Table 3d : Difference in the Reading Compre hension Achievement Test with respect to Medium of Instruction in College level.

Method	Cate gory	No.	Mean	SD	CR Value	Table Value	Remarks
Summa-rization Group	English	18	23.222	4.197	0.088	1.96	NS
	Mother Tongue	2	23.500	1.500			
Question Generation Group	English	18	23.000	4.163	0.480	1.96	NS
	Mother Tongue	2	21.500	1.500			
Control Group	English	10	22.600	2.691	0.968	1.96	NS
	Mother Tongue	10	20.900	4.527			

It is inferred from the above table that there is no significant difference in effect of the three groups for prospective teachers' reading comprehension achievement test with respect to medium of instruction in college level.

Hypothesis 3e : There is no significant difference in prospective teachers reading comprehension achievement of literacy prose texts with summar ization and Question-generation as two generative study strategies with respect to speaking in English.

Table 3e : Difference in the Reading Compre hension Achievement Test with respect to speaking in English.

Method	Cate gory	No.	Mean	SD	CR Value	Table Value	Remarks
Summa-rization Group	Some times	18	23.167	4.003	0.265	1.96	NS
	Rarely	2	24.000	4.000			
Question Generation Group	Some times	18	21.556	3.890	0.656	1.96	NS
	Rarely	2	23.500	2.500			
Control Group	Some times	17	23.765	3.473	2.750	1.96	S
	Rarely	3	17.667	2.625			

It is inferred from the above table that there is significant difference in the effect of Control group for prospective teachers' reading comprehension achievement test with respect to speaking in English.

Hypothesis 3f : There is no significant difference in prospective teachers reading comprehension achievement of literacy prose texts with Summarization and Question-generation as two generative study strategies with respect to reading English story books.

Table 3f : Difference in the Reading Compre hension Achievement Test with respect to Reading English Story books.

Method	Cate gory	No.	Mean	SD	CR Value	Table Value	Remarks
Summa-rization Group	Freqeuntly	9	24.444	4.003	1.187	1.96	NS
	Rarely	11	22.273	3.744			
Question Generation Group	Freqeuntly	5	23.000	1.897	0.092	1.96	NS
	Rarely	15	22.800	4.490			
Control Group	Freqeuntly	8	21.250	4.456	0.456	1.96	NS
	Rarely	12	22.083	3.174			

It is inferred from the above table that there is no significant difference in the effect of the three groups for prospective teachers' reading comprehension achievement test with respect to reading English story books.

Findings

1. The Summarization group has high effect on the prospective teachers' reading compre hension achievement test. This may be due to the capture of key points or gist of the prose text material which includes the major events. The prospective teachers could summarize the reading material in their own words leaving less important details. This enhances them to create new ideas with their prior knowledge.
2. Gender has significant impact on the effect of prospective teachers' reading comprehension achievement test for the Summarization group. The females proved to be effective than the males. This may be due to the lack of responsibility taken by the male prospective teachers and the sincerity of female prospec tive teachers in the reading comprehension. The inability and hesitation to read the text may also be a major cause for the male student-teachers. For this, they should involve themselves in generative study strategies to enhance their reading process.
3. Locality has significant impact on prospective teachers' reading comprehension achievement for the Control group. Rural prospective teachers have less effect in reading compre -hension than their urban counterparts. This may be due to many reasons. The students coming from rural areas were not well trained in reading during their school days. This may be due to the lack of facilities for learning, poor process of teaching, basic of interest and dearth of qualified English teachers. But in urban areas there are more facilities in learning English language. The need and importance of the language is realized by everyone as they had to compete themselves with outside world. There are also high qualified English teachers. The Control group has been given no treatment and the rural student-teachers are less in number than the urban which may make them have significant impact on reading comprehension achieve ment test.
4. Speaking in English has significant impact on the effect of prospective teachers' reading comprehension achievement for the Control group. This may be due to the effect of spoken English sometimes by the Control group which leads them to have good command of the language and to understand the prose text with proper listening and reading.

Recommendations

- Teacher educator can increase the amount of reading habits inside the classroom.
- Teachers should ensure that learning is a generative process. This leads the students to begin with believing in themselves.
- To engage the learners in active processing of the information with meta-cognitive skills.
- Teachers should motivate the students to provide strategies to improve their recall, integration, organization and elaboration.
- Instructional activities such as note-taking, concept mapping, graphing and mnemonics should be used to enable students to mentally "play with" information.
- Attention training should be often insisted to the students by self-control, planning and organizing.
- The effect of adaptive support for students' use of learning strategies and comprehension monitoring process making should be incorporated.
- Teachers must justify employing summari zation and question-generation as effective generative strategies in the classroom practices.
- Sequence of learning strategies should be developed which helps to ensure longer retention of the content.

- Prospective teachers should be provided with web resources for generative learning.
- Generative strategies must be helpful for children who have learning problems and have trouble with organization of their thoughts.

Conclusion

Learning how to read is probably one of the most important skills that a child will acquire in his/her life time. Mastering this skill takes years and the processes involved in achieving success in this area are numerous. The reading of English in B.Ed colleges until today is in a miserable state. The most unfortunate fact is the lack of any attainable aim of reading the language. So, the teacher educators should enhance the reading by introducing generative study strategies to prospective teachers. This brings prior experiences and knowledge to the classroom and it is useful to be aware of situations where the understanding of new concepts may be impeded by prospective teachers' prior schema. Generative learning techniques can be a way of tapping into the prospective teachers' experience and knowledge and bridging it with the new content when the educator is presenting. The technique of question-generation can provide insight into the motivation, attention and thinking of the reading material for effective learning outcomes. Recognizing the importance of study strategies in reading comprehension, the researcher has made an attempt to measure the effect of generative study strategies on prospec tive teachers. Yet more research on situation in which spontaneous study strategies are effective is needed in the future.

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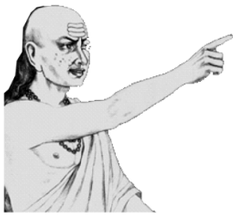

Education is the best friend. An educated person is respected everywhere. Education beats the beauty and the youth.

- *Chanakya*

THE PROBLEM SOLVING ABILITY OF COLLEGE MATHEMATICS STUDENTS

***Dr. S. Davasuba **Dr. J. Josphine Saleth Mary**

Abstract

Problem solving in psychology refers to the process of finding solutions to problems encountered in life. Solutions to these problems are usually situation or context-specific. The objective of the study is to find out the significant difference in problem solving ability of college mathematics students with respect to gender, board of locality, locality and medium. Survey method was used in this study. 200 first UG mathematics students from arts and science college were the sample. The problem solving ability tool was prepared by the investigator and guide. t-test, F-test and percentage analysis were used. There is no significant difference among undergraduate mathematics college students in problem solving ability with respect to gender, Board of study and locality. There is significant difference between the Tamil and English undergraduate mathematics college students in problem solving ability.

Keywords : *Problem solving ability, artificial intelligence*

Introduction

Problem solving is an important compo nent of mathematics education because it is the single vehicle which seems to be able to achieve at school level all three of the values of mathe matics listed functional, logical and aesthetic. Problem solving is a mental process which is the concluding part of the larger problem process that includes problem finding and problem shaping where problem is defined as a state of desire for the reaching of a definite goal from a present condition that either is not directly moving towards the goal, is far from it or needs more complex logic for finding a missing description of condi tions or steps toward the goal. The findings of Sami nathan and Anandan (2006) on the topic "A study on the effect of problem solving ability on achievement in physics" say that Indivi dualized outcomes measures on problem solving counceling showed that problem solving ability among the subjects in the experimental groups had improved after four counceling session and suicidal behaviour has been reduced. Also the findings of Sullivan, Florence,(2006) on the Topic "A study on the ideal science student and problem solving" say that "There was no significant difference in problem-solving ability between these groups (students with a puzzle solver view of science) and students who have a dynamic view of the nature of science knowledge.

Significance of the Study

Considering the most complex of all intellectual functions, problem solving has been defined as a higher order cognitive process that requires the modulation and control of more routine or fundamental skills. Problem solving has two major domains: mathematical problem solving and personal problem solving where, in the second, some difficulty or barrier is encountered. Further problem solving occurs when moving from a given state to a desired goal state is needed for either living organisms or an artificial intelligence system. While problem solving accompanies the very beginning of human evolution and especially the history of mathematics, the nature of human problem solving processes and methods has been studied by psychologists over the past hundred years. Methods of studying problem solving include introspection, behaviourism,simulation, computer modelling and experiment. This study helps to know the individual differences in their problem solving ability with respect to their personal, family and institutional variables.

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Objectives

1. To find the significant difference, if any, in the problem solving of college mathematics students with regard to the personal variables.
2. To find the significant difference, if any, in the problem solving of college mathematics students with regard to the family variables.
3. To find the significant difference, if any, in the problem solving of college mathematics students with regard to the institutional variables.

Hypothesis

1. There is no significant difference in the problem solving of college mathematics students with regard to the personal variables.
2. There is no significant difference in the problem solving of college mathematics students with regard to the family variables.
3. There is no significant difference in the problem solving of college mathematics students with regard to the institutional variables.

Methodology : Survey method was adopted for this study.

Tools used : The tool was prepared by the investigator to find out the problem solving ability of the college students. Problem solving ability tool consisted of 20 items, each questions deal with the thinking process. The positive response on the item indicating correct answer should be awarded one mark and for negative responses on the item indicating wrong answers should be awarded zero.

Sample : The investigator selected 200 first year UG mathematics students from 6 colleges in Thoothukudi area. The sample was taken from 3 aided colleges and 3 unaided colleges.

Data analysis

Table 1 : Significance of difference in the problem solving ability of college mathematics students with regard to personal variables

Variable	Category	No.	Mean	S.D	CR value	Table value	Remark at 0.05 level
Gender	Male	40	14.50	3.013	1.338	1.96	NS
	Female	160	16.50	2.938			
Locality	Urban	105	16.51	3.208	1.203	1.96	NS
	Rural	95	15.63	2.813			

It is inferred from the table.1 that, there is no significant difference between the male and female undergraduate mathematics college students in problem solving ability. Hence null hypothesis is accepted with respect to their gender. It is also inferred from the above table1 that, there is no significant difference between the urban and rural undergraduate mathematics college students in problem solving ability. Hence null hypothesis is accepted with respect to their personal variables.

Table 2 : Significance of difference in the problem solving ability of college mathematics students with regard to family variables.

Sources of variable	Sum of squares	df	Mean squares	F-value	Table value	Remarks at 0.05 level
Between Sample	18.928	2	9.464	1.016	3.0700	NS
Within Sample	1826.258	197	9.318			

It is inferred from the table.2 that, F value is less than the table value. Hence there is no significant difference among family income of undergraduate mathematics college students in problem solving ability. Hence null hypothesis is accepted with respect to their family.

Table 3 : Significance of difference in the problem solving ability of college mathematics students with regard to institution variables.

Variable	Category	No	Mean	S.D	Cr value	Table value	Remark at 0.05 level
Syllabus	State	177	16.27	2.905	1.891	1.96	NS
	Metric	32	15.63	2.813			
Medium	Tamil	125	15.73	2.989	2.146	1.96	S
	English	75	16.71	3.079			

It is inferred from the above table that, there is no significant difference between the students who studies in the state board syllabus and the students who studies in the matriculation schools undergraduate mathematics college students in problem solving ability. Hence null hypothesis is accepted with respect to their syllabus.

It is also inferred from the above table that, there is significant difference between the Tamil and English undergraduate mathematics college students in problem solving ability. Hence null hypothesis is rejected with respect to their medium.

Findings

1. There is no significant difference between the male and female undergraduate mathematics college students in problem solving ability.
2. There is no significant difference between the urban and rural undergraduate mathematics college students in problem solving ability. Hence null hypothesis is accepted with respect to their personal variables.
3. There is no significant difference among the family income of undergraduate mathematics college students in problem solving ability.
4. There is no significant difference between the students who studies in the state board syllabus and the students who studies in the matriculation schools undergraduate mathematics college students in problem solving ability.
5. There is significant difference between the Tamil medium and English medium under graduate mathematics college students in problem solving ability.

Educational implications

1. A Comparative study can be made on Problem solving.
2. Studies may be carried out to find out the metacognition and problem solving ability of teachers because it contributes much to the learning process of the students.
3. A comparative study on problem solving ability among the Indian and foreign students studying in international schools can be conducted.

Conclusions

Teachers should concentrate on providing opportunities for students to interact with problem rich solutions, besides providing appropriate problem rich situations, teachers must encourage students to find their own solution and give them opportunity to share and compare their solution methods and answers. One way to organize such instruction is to have students work in small group initially and then share ideas and solutions in whole class discussions.

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Education is not filling a pail but the lighting of a fire.

- William Butler Yeats

EFFECT OF ACTIVITY BASED MATHEMATICS TEACHING

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Abstract

One of the important values of teaching mathematics is that it should develop logical and reasoning capacity among students. But, there is a general feeling that mathematics is a very dry subject, among many students and parents. The present system of mathematics education and the mathematics classroom fails to facilitate joyful learning and the development of logical and reasoning competence among students and thus they fail to apply them in their real life. This study in this context, was conducted among 50 mathematics prospective teachers follow experimental method by adopting the parallel-group design. It is found that there is significant difference between achievement scores of control group and experimental group mathematics prospective teachers in their post- test scores. Achievement scores of experimental group are better than the control group. Therefore, activity method is effective in teaching Mathematics.

Keywords : *Activity, Mathematics Teaching, Joyful Learning*

Introduction

Activity based teaching method acts as an Active problem solver for the students. It enhances creative aspect of experience. It also gives reality for learning. This type of learning uses all available resources. It provides varied experience to the students to facilitate the acquisition of knowledge, experience, skills and values .It builds the students self-confidence and develops understanding through works. It helps to develop happy relationship and interest in them. When we give an activity, it is said to be the language of the child. It is effective in all the subjects and social relation provides opportuni ties to mix with others.

Significance of the study

Mathematics is vital to the future of the child and national development. Mathematics makes an essential contribution to a good grounded education playing a vital role in modernization of this civilization. It is everywhere and affects everyday lives of people. Mathematics is the foundation of scientific and technological knowledge that is essential in social-economic development of the nation. It emerges from the real world. Mathematics is one of the essential and basic areas of the curriculum which has a wide field of subject matter. The teaching and learning of mathematics is a complex activity and many factors determine the success of this activity. Though mathematics is an important subject and occupies a central position, since ancient period, still it has not been the interest of many students. Students with early mathematical difficulties could have poor performance in both verbal and visuo-spatial work memory tasks as well as on language tests and a fluid intelligence test indicating a thoroughly lower cognitive base.

Mathematics is a subject which can be evaluated more objectively. There is no chance for favoritism in evaluation. Therefore it can be safely inferred that children show poor performance in mathematics because they do not get interest in learning numeral concepts. Teaching pattern in classroom is often not interesting. However when students are taught through play activities they do not realize that they are learning but actually they are gaining knowledge through participating in different activities. When students play with materials such as cards, buttons and blocks, they develop skills in logic. They experiment with counting and

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sorting things and solving problems. Activities like observing, comparing, working with shapes, sizes, and quantities forms the basis for under standing mathematics for all higher-order thinking.

Early learning affects later outcomes, whatever children learn at this stage will affect their career also because economy revolves around mathematics and their weak concepts will affect their ability to earn their livelihood.

Students feel problems in understanding of mathematical concepts like multiplication, division, size and shape concepts when they taught in classroom in regular way. As discussed earlier, if they learn in a better way without any pressure and it makes the children happy and gets them interested in learning.

Objectives of the Study

1. To find out whether there is any significant difference between mathematics prospective teachers of experimental and control group in their post- test scores.
2. To find out whether there is any significant difference between control group mathematics prospective teachers in their post-test scores with respect to gender.
3. To find out whether there is any significant difference between experimental group mathematics prospective teachers in their post-test scores with respect to gender.
4. To find out whether there is any significant difference between control group mathematics prospective teachers in their post-test scores with respect to locality.
5. To find out whether there is any significant difference between experimental group mathematics prospective teachers in their post-test scores with respect to locality.

Methodology

The method adopted in this study is experimental method. The parallel-group design is also known as equivalent-group method was applied. It is designed to overcome certain difficul ties encountered in the one-group design. Here, the relative effects of two treatments are compared on the basis of two groups which are equated in all relevant aspects. The second group which is called the control group serves as a reference from which comparisons are made. The control group receives training through lecture method, where as the experimental group receives treatment.

Sample were taken from 50 mathematics prospective teachers undergoing training in V.O.C.College of Education, Thoothukudi. They were divided into two groups to form control group (25) and experimental group (25). Purposive sampling technique was adopted and Achievement Test was conducted those who gain more than 60% were selected as sample. Treatment was given to both control group and experimental group by employing traditional method and teaching through activity (art and craft work) respectively to realize the effectiveness of the use of activity in learning. The treatment time spread over 10 days seems to be adequate for the purpose. The day wise schedule was well designed and implemented. Each day spends one hour for treatment of control group and experimental group from the pedagogy of mathematics (content mastry).

Self made tools a) - Achievement Test, b) Scale for Activity Based Mathematics Teaching on Cheerful Learning were used and standardised with content validity and with the reliability score 0.73. The personal data were collected from the prospective teachers that included the gender, age, locality, type of family, learning style.

Differential analysis was used to interpret data.

Data Analysis

Hypothesis 1 : There is no significant difference between experimental and control group mathematics prospective teachers in their post- test scores.

Table 1 : Significant difference between experimental and control group mathematics prospective teachers in their post-test scores.

Category	N	Mean	S.D	Calculated t-value	Table t-value	Remarks
Control Group	25	14.08	1.80	6.35	2.069	S
Experimental Group	25	17.32	2.60			

The table 1 shows that the calculated t-value (6.35) is greater than the table t-value (2.069) at 5% level of Significance. Therefore the null hypothesis is rejected. It shows that there is significant difference between experimental and control group mathematics prospective teachers in their post- test scores.

Hypothesis 2 : There is no significant difference between the control group mathematics prospec tive teachers in their post-test scores with respect to gender.

Table 2 : Significant difference between the mathematics prospective teachers of control group in their post-test scores with respect to gender

Gender	N	Mean	SD	Calculated t-value	Table t-value	Remarks
Male	5	14.4	1.62	0.38	2.069	NS
Female	20	14	2.10			

Table. 2 shows that the calculated t-value (0.38) is less than the table t-value (2.069) at 5% level of Significance. Therefore the null hypothesis is accepted. It shows that there is no significant difference between post-test scores of control group mathematics prospective teachers with respect to gender.

Hypothesis 3: There is no significant difference between experimental group mathematics pros pective teachers in their post-test scores with respect to gender.

Table 3 : Significant difference between achievement test scores of experimental group mathematics prospective teachers in their post-test scores with respect to gender

Gender	N	Mean	SD	Calculated t-value	Table t-value	Remarks
Male	5	14.8	0.98	5.6	2.069	S
Female	20	17.6	0.97			

Table 3 shows that the calculated t-value (5.6) is greater than the table t-value (2.069) at 5% level of Significance. Therefore the null hypothesis is rejected. It shows that there is significant difference between post-test scores of experimental group mathematics prospective teachers with respect to gender.

Hypothesis 4 : There is no significant difference between control group mathematics prospective teachers in their post-test scores with respect to locality.

Table 4 : Significant difference between control group mathematics prospective teachers in their post-test scores with respect to locality.

Locality	N	Mean	SD	Calculated t-value	Table t-value	Remarks
Urban	15	14.07	1.87	0.069	2.069	NS
Rural	10	14.2	2.4			

To table 4 shows that the calculated t-value (0.069) is less than the table t-value (2.069) at 5% level of Significance. Therefore the null hypothesis is accepted. It shows that there is no significant difference between post-test scores of control group mathematics prospective teachers with respect to locality.

Hypothesis 5 : There is no significant difference between post-test scores of experimental group mathematics prospective teachers with respect to locality.

Table 5 : Significant difference between post-test scores of experimental group mathematics prospective teachers with respect to locality.

Locality	N	Mean	SD	Calculated t-value	Table t-value	Remarks
Urban	15	18.1	0.93	3.0	2.069	S
Rural	10	16.3	1.42			

To table 5 shows that the calculated t-value (3.0) is greater than the table t-value (2.069) at 5% level of significance. Therefore the null hypothesis is rejected. It shows that there is significant difference between post-test scores of experimental group mathematics pros pective teachers with respect to locality.

Findings and Interpretations

There is significant difference between experimental and control group mathematics prospective teachers in their post- test scores in activity based mathematics teaching. That is, the experimental group mathematics prospective teachers are better than the control group

mathematics prospective teachers in their post-test scores. Therefore, it is found that the activity method is effective for teaching mathematics. This study agreed with the study of Krishnand Rohini and Pandey (2009) that those who had a liking for one activity gradually started liking other activities also.

There is no significant difference between post-test scores in activity based mathematics teaching of control group mathematics prospective teachers with respect to gender and locality.

There is significant difference between post-test scores in activity based mathematics teaching of experimental group mathematics prospective teachers with respect to gender and locality. This study is contradictory with the study of Priya Yadav (2016) with respect to gender.

Recommendations

1. A module of activity based mathematics teaching can be included in teachers training and B.Ed; Curriculum.
2. Set of mathematical teaching aids may be provided equipped with realistic mathematics work sheets and they are designed in the form of the game.
3. Favorable attitude towards the teaching of mathematics can be promoted by using mathematical laboratory for the improvement of mathematics teachers and learners.

Conclusion

Human beings assimilate abstract concepts by relating it with his or her own body. For example we understand the concept of time by relating it with our body. Future is in front of the body and past is behind it. In this way, mathematical concepts can be learned and understood by incorporating the involvement of body and mind. To avoid the possibilities of these difficulties, learners have to be provided with differentiated instruction that is activity based mathematics teaching.

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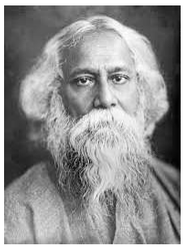

The highest education is that which does not merely give us information but makes our life in harmony with all existence.

- Rabindranath Tagore