ISSN 0973-6190

Vol. 51 (No. 3) July - September 2014

Peer reviewed Journal Quarterly Journal

Journal of EDUCATIONAL RESEARCH AND EXTENSION

SRI RAMAKRISHNA MISSION VIDYALAYA
COLLEGE OF EDUCATION (AUTONOMOUS)
Coimbatore - 641 020

Published by :

Sri Ramakrishna Mission Vidyalaya

College of Education (Autonomous), Coimbatore - 641 020

Phone No.: 0422 - 2692441 Fax: 0422 - 2694572

e-mail: srkvcoejere@gmail.com

Printed at :

Ramakrishna Mission Vidyalaya Printing Press

CONTENTS

ISSN 0973-6190

GLOBAL WARMING

1

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GLOBAL WARMING: MEANING

Global Warming is a natural process which increases the average temperature of earth's near-surface air and oceans due to increase in the level of carbon dioxide (CO_2) and other greenhouse gases in the atmosphere because of man-made activity. If the terms explained in a short from that, the abnormal increase of the temperature in earths surface, air and oceans is known as global warming.

GLOBAL WARMING

An increase in the concentration of greenhouse gases in the atmosphere increases the atmosphere's ability to block the escape of infrared radiation. The Earth's insulator gets thicker, resulting in global warming. There are a number of 'man-made' gases that have a harmful effect on the atmosphere (refer Causes of Greenhouse Effects).

Global warming is the increase in the average measured temperature of the Earth's near-surface air and oceans since the mid-20th century, and its projected continuation. Global surface temperature increased 0.74 ± 0.18°C (1.33 ± 0.32°F) between the start and the end of the 20th century. Climate model projections indicate that average global surface temperature is likely to rise a further 1.1° ± 6.4° C (2.0° ± 11.5° F) during the twenty-first century.

The Intergovernmental Panel on Climate Change (IPCC) concludes that most of the observed temperature increases since the middle of the 20th century was very likely caused by increasing concentrations of greenhouse gases resulting from human activity such as fossil fuel burning and deforestation. The IPCC also concludes that variations in natural phenomena such as solar radiation and volcanic eruptions had a small cooling effect after 1950. These basic conclusions have been endorsed by more than 40 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries.

Climate model projections summarized in the latest IPCC report indicate that the global surface temperature is likely to rise a further 1.1 to 6.4 °C (2.0 to 11.5 °F) during the 21st century. The uncertainty in this estimate arises from the use of models with differing sensitivity to greenhouse gas concentrations and the use of differing estimates of future greenhouse gas emissions. Most studies focus on the period leading up to the year 2100. An increase in global temperature will cause sea levels to rise and will change the amount and

pattern of precipitation, probably including expansion of subtropical deserts. Warming is expected to be strongest in the Arctic and would be associated with continuing retreat of glaciers, permafrost and sea ice. Other likely effects include changes in the frequency and intensity of extreme weather events, species extinctions, and changes in agricultural yields. Warming and related changes will vary from region to region around the globe, though the nature of these regional variations is uncertain. Political and public debate continues regarding global warming, and what actions to take in response. The available options are mitigation to reduce further emissions; adaptation to reduce the damage caused by warming; and, more speculatively, geo-engineering to reverse global warming. Most national governments have signed and ratified the Kyoto Protocol aimed at reducing greenhouse gas emissions.

CAUSES OF GLOBAL WARMING

Global warming is caused by several causes such as pollution from factories, carbon dioxide from rotting trees, the burning of coal, natural gasses and fossil fuels lead to methane travelling into the Earth's atmosphere any transportation vehicles, water vapor, and many other little things, which contribute to make global warming even worse.

Scientists have different opinions about whether the current global warming is natural or unusual. Some believe that it is part of the Earth's natural cycle of warming and cooling. However most believe that what we are now experiencing is unusual and has been caused by human activities. Another great contributor to Global Warming is water Vapour. The water vapour contributes to the Greenhouse Effect, which then leads to Global Warming. In fact, water vapour makes up sixty percent of the Greenhouse gases, twenty percent is carbon dioxide and the other twenty percent is caused by nitrous oxide, methane, ozone and other varieties of gasses.

Natural Causes

Global warming is caused by several things, which include man-made or anthropogenic causes, and global warming is also caused by natural causes. Natural causes are causes that are created by nature. One natural cause is a release of methane gas from arctic tundra and wetlands. Methane is a greenhouse gas and a very dangerous gas to our environment. A greenhouse gas is a gas that traps heat in the earth's atmosphere. Another natural cause is that the earth goes through a cycle of climate change. This climate change usually lasts about 40,000 years.

Man-Made Causes

Man-made causes probably do the most damage to our planet. There are many man-made causes of global warming. Pollution is one of the biggest man-made problems. Pollution comes in many shapes and sizes. Burning fossil fuels is one thing that causes pollution. Fossil fuels are fuels made of organic matter such as coal, or oil. When fossil fuels are burned they give off a green house gas called CO_2. Also, mining coal and oil allows methane to escape. How does it escape? Methane is naturally in the

ground. When coal or oil is mined you have to dig up the earth a little bit. When you dig up the fossil fuels you dig up the methane as well letting in escape into the atmosphere. Another major man-made cause of Global Warming is population. More people mean more food, and more methods of transportation. That means more methane because there will be more burning of fossil fuels (if you're into gas burning cars like our planet is), and more agriculture. If you've been in a barn filled with animals and you smelled something terrible, you were smelling methane. Another source of methane is manure. Because more food is needed to feed the population we have to raise food. Animals like cows are a source of food which means more manure and hence more methane. Another problem with the increasing population is transportation. More people mean more cars and more cars means more pollution. Also, many people have more than one car. There are definitely ways of raising animals and farming that use no manure and no methane. Once we realized the problem we should have stopped immediately using manure. Since CO_2 contributes to global warming, the increase in population makes the problem worse because we breathe out CO_2. Also, the trees that convert our CO_2 to oxygen are being cut down because we're using the land that we cut the trees down from as property for our homes and buildings. We are not replacing the trees (trees are a very important part of our eco-system), so we are constantly taking advantage of our natural resources and giving nothing back in return.

GLOBAL WARMING IMPACTS AND EFFECTS

The effects of Global Warming can already be seen. The IPCC's Third Assessment Report finds that in the last 40 years, the global average sea level has risen, ocean heat content has increased, and snow cover and ice extent have decreased, which threatens to inundate low-lying island nations and coastal regions throughout the world.

Effects of Global Warming on Plants and Animals

Climate Change

Climate is the long term average of a region's weather events lumped together. Climate change represents a change in these long term weather patterns.

Recent Climate History

The Earth has warmed about 0.6 Celsius in the last century. In 1988 the United Nations Environment Program and the World Meteorological Organization put together a team of 200 top scientists to show whether as greenhouse gases increase, so the world's temperature does. In 2001 the two groups, now known as the Intergovernmental Panel on Climate Change (IPCC) had concluded that global air temperature had increased by 0.6 Celsius since 1861.

Natural Disasters

Climate change could have a severe effect on natural disasters. There might be more frequent and intense hurricanes, tornadoes, storms, cyclones and water evaporation.As a result of natural disasters,

houses, cities and towns would need to be built more stably against the forces of wind and water.These natural disasters could have a huge effect on people's lives and those of future generations.

Sea level rises

The sea level worldwide rose between 10-25cm during the 20th century. This was confirmed by the IPCC scientists. To understand why this is happening, we need to understand the role of the polar caps & the glaciers. As temperatures rise it is expected that glaciers and polar caps will continue to melt making the sea level rise. Low-lying Pacific nations may be entirely flooded under the ocean. Coastal cites and coast-lines would not be suitable for living because of the sea level. An important role of the polar caps is also to reflect the sun light. If our polar caps keep melting, it would add more heat to our oceans and land instead of helping regulate it. Without polar caps the sun would be adding heat to the vicious circle. Due to the rising temperature of our oceans and plants and animals which aren't heat tolerant would die.

Human Health

In a warmer world, scientists predict more people may get heat stressed, sicken or die, due to the hot days and nights. Diseases now found only in the tropics, spread by animals especially mosquitoes and other insects, will become more common in cooler areas as these animals widen their range and travel into regions too cold for them at present. Today 45 percent of people in the world live where they might get bitten by a mosquito carrying the parasite that causes malaria: that will increase to 60% if temperatures rise. Other tropical diseases that may spread similarly include dengue fever, yellow fever and encephalitis. Scientists also predict more allergies and respiratory diseases which could effect the community.

Agriculture

Two broad types of effects on agriculture are likely to occur from the increases in green house gases. Firstly, the direct effect of increase in concentrations of ambient CO_2 and secondly, the effect of changed climate on crops, live stock, pests, soil and water supplies (Abrol et.al, 1991)

Global Warming may make Earth warmer in some cold places. People in these areas might have more chances of growing crops, but it might also bring droughts to other areas where we presently grow crops. Inland lakes and rivers could shrivel. Forest and Bush fires could occur more often. Frequent periods of drought could make it difficult to raise crops for food. Crops and woodlands many also be afflicted by insects and plant disease.

Global warming is having a significant impact on hundreds of plant and animal species around the world -- although the most dramatic effects may not be felt for decades, according to a new study in the journal Nature. "Birds are laying eggs earlier than usual, plants are flowering earlier and mammals are breaking hibernation sooner,"

"Clearly, if such ecological changes are now being detected when the globe has warmed by an estimated average of only 1 degree F (0.6°C) over the past 100 years, then many more far-reaching effects on species and ecosystems will probably occur

by 2100, when temperatures could increase as much as 11°F.

Effects of Global Warming in the Future

Global warming will have serious impacts on the environment and on society. Higher temperatures will cause a melting of ice in Greenland and Antarctica. This will accelerate the rise of sea level. The speed at which global warming is expected to occur in the 21st century is faster than most plant and animal species will be able to cope with. Some will adapt but others will suffer and may become extinct. Global warming will affect agriculture. New crops will be able to be grown in areas that are currently too cold to support them. However, more pests and diseases may offset any benefits higher temperatures may have. Water resources will also be affected. Some reservoirs may dry up if temperature increases, especially if rainfall also decreases. Rising sea levels may pollute fresh groundwater supplies with salt water.

Global warming will also affect human health. There may be more heat-related illnesses in hotter summers, and increased breathing problems as higher temperatures increase air pollution in cities, reducing air quality. The malaria mosquito may also be able to spread to other regions of the world where it is currently too cold to survive and breed. More extreme weather, for example storms, floods and droughts will have severe impacts on the environment and on society. The poorest people in society will unfortunately be those least able to cope with the impacts of global warming.

CONTROLLING MEASURES

Global warming can be controlled by the following methods:

- ★ The fuels such as petrol, coal and diesel can be replaced by non-pollutant agents such as electric current and sunlight.
- ★ Burning of firewood in the kitchen may be substituted by non-pollutant fuels such as gas and electric current.
- ★ Forest fire should be prevented.
- ★ More and more trees must be grown. The trees consume CO_2 during photosynthesis.
- ★ The CO_2 produced in the industries should be pumped under ground.
- ★ The use of CFCs in the refrigerators and air conditioners may be substituted by hydroflouro carbons.
- ★ The people must be educated on the harmful aspects of green house effect and global warming by conducting awareness programmes.
- ★ Conferences and meetings must be arranged at the national, international and global level to discuss the ways and means to control global warming.

The following conferences and meetings were already conducted to check green house effect and global warming:

- ★ Inter Governmental Panel Climatic Change in 1988.
- ★ Berlin Conference in 1995, held at Berlin, Germany.
- ★ Ceotto Summit in 1997, held at Ceotto, Japan.

GREENHOUSE EFFECT

The Greenhouse Effect is a natural process in which certain gases, known as "greenhouse gases", trap heat chat radiates from the earth's surface. In fact, a greenhouse is a construction of transparent walls and roofs in cold countries to provide adequate heat to the soil and plants. Solar energy passes through the glass and warms everything inside. Things lose heat by radiation. But the glass reflects some of this heat back into the greenhouse. The glass thus traps the sun's heat and prevents it from escaping, keeping the greenhouse warm.

Our atmosphere works much like a greenhouse. The sun emits short-wave radiation, which passes through the atmosphere to the Earth. Some of it is absorbed and the Earth then radiates some of the Sun's energy back into the atmosphere in the form of long-wave infrared radiation. Greenhouse gases such as carbon dioxide, methane, ozone and nitrous oxide, which are present in the atmosphere, form a sort of blanket around the Earth and trap some of the infrared radiation, retaining the heat, which results in the relating of the radiant energy balance of the Earth. (Nitrogen and oxygen, of which the atmosphere is almost entirely composed, do not retain heat.) Without the greenhouse gases, the temperature on Earth would be approximately 33^0 C colder than it is now, thus covering the Earth with ice. However, due to human activities, greenhouse gases are increasing, and therefore trapping more heat, which is steadily increasing the average temperature of the Earth.

On Earth, the most important greenhouse gases are:

- Water vapour
- Carbon dioxide
- Methane
- Ozone
- Nitrous oxide
- CFCs (chlorofluorocarbons)
- Other greenhouse gases include sulphur hexa-fluoride, hydrofluorocarbons, perfluorocarbons and nitrogen trifluoride.

Importance of Greenhouse Effect

★ If there was no greenhouse effect and the atmosphere was transparent to the outgoing long wavelength radiation emanating from the earth's surface, the mean equilibrium temperature of the earth's surface would be lower and probably below freezing point (somewhere around 18^0C/4^0F).

★ The greenhouse gases thus act as a thermal blanket surrounding the earth.

Causes of Greenhouse Effect

★ Carbon dioxide is the worst offender of all the greenhouse gases. This is due to the burning of fossil fuels.

★ Other important greenhouse gases are water vapour, chlorofluorocarbons (CFCs), methane, ozone and nitrogen oxide. Carbon dioxide is released into the atmosphere every time fossil fuels are burnt for energy by automobiles, power plants and factories.

★ Atmosphere watervapour is a significant greenhouse gas, which could lead to

further warming. Increased water vapour and changes in atmospheric circulation could also create changes in cloud cover, although more clouds would, on an average, have a cooling effect. Water vapour will increase in response to global warming and thus, reinforce this effect.

- ★ Halocarbons or chlorofluorocarbons are well known depleters of stratospheric ozone, but they are also significant as greenhouse chemicals. The use of CFCs mainly takes place into the industries that manufacture refrigerators, air conditioners, paints and other sprays. The concentration of nitrogen oxides has increased by 5-10% since pro-industrial times. Although the heat absorbing capacity of nitrous oxide is about 230 times more than that of carbon dioxide, its contribution to greenhouse is only 6% because of its much lower concentration in the atmosphere.
- ★ Methane is known to be produced during bacterial decomposition of flooded peat and forest biomass. Hydroelectric reservoirs are also an important source of methane. The concentration of methane is increasing at the rate of 1%, and its capacity to absorb heat is about 25 times more than that of carbon dioxide. The role of methane as an agent of greenhouse effect is about 12%.
- ★ The ozone concentration is changing both in the stratosphere and troposphere. These changes are linked to human developmental activities. Global warming potential of ozone is 2000 times that of carbon dioxide.

Impact of Greenhouse Effect

Change in climate and global warming are the most important impacts of greenhouse effect. Some interrelated effects include:

- ★ Gradual increase in the temperature of the earth's surface and lower atmosphere.
- ★ It will lead to an increased pace of desertification.
- ★ An increase in the intensity of extreme weather events, including significant changes to the amount and pattern of precipitation, will result in flooding and drought.
- ★ It will also result in changes in agricultural yields. People will face severe food shortage due to shortage of agricultural crops.
- ★ Photosynthesis, water use efficiency and yielding of plants would decrease. The photosynthesis by phytoplankton in the aquatic eco-system would be greatly reduced.
- ★ The lowering of ocean pH will result in an increase in coral bleaching.
- ★ Sudden change in the climate leads to increased intensity of hurricanes and cyclones and other natural disasters.
- ★ According to an estimate, a 2^{o}C average increase in global temperature would warm the Antarctic by 5^{o}C .
- ★ This temperature rise is enough for the melting and disintegration of ice-sheets. This will increase the sea level by 16-20 feet.

★ Extinction of species – mostly of animals living in cold areas as their homes is melting.

★ Impact on Forests- Forests absorb CO, If climate change is rapid conditions may become unsuitable for trees of temperate forests to complete more the one or more stages of their life cycles.

Impact on Agriculture

★ Increase in temperature will increase evaporation.

★ Cultivation areas will be enlarged.

★ Soil water will become insufficient because excessive evaporation and transpiration.

★ Water and soil temperatures will rise.

★ Incidence of pests, diseases and weeds will increase.

★ Soil fertility will deteriorate at a rapid pace.

ROLE OF THE TEACHERS ON GLOBAL WARMING

The teacher is a resource person, and social reference to bring out changes in the society. Global warming is a international problem. The awareness should be created by the teacher from Local, Regional and International point of view. Environmental education should be emphasized particularly by active participation in preventing and solving environmental problems. To promote the value and necessity of local, National and International co-operation in the prevention and solution of global warming and environmental problems, teacher role is considered as essential one.

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ISSN: 0973-6190

A STUDY ON CREATIVITY OF STANDARD XI STUDENTS AND ITS RELATIONSHIP TO THEIR ACADEMIC PERFORMANCE

2

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INTRODUCTION

Many countries in the world attempt to stifle originality and independence in thinking and facilitate brain washing and indoctrination. Development of creativity appears to be the alternative in this sordid state of human affairs. Further, new ideas, process and inventions have become absolutely necessary for the continued development of science and technology. For this, creativity forms the basis; the outcome of creative thinking is "novelty" and "innovativeness". Terms like creativity, innovativeness etc., are now widely used in the field of education.

NEED FOR THE STUDY

The development of creative thinking among children is essential so that they are not only able to adjust themselves to the ever changing situations of life, but are also able to adopt the new ways of living for the successful accomplishment of their life goals.

The teaching community generally feels that it would be an additional burden on time and energy of the teacher to care for the development of creative potentialities among children through the use of different teaching strategies.

The study helps to understand the school environment conducive to promote creativity and to find out if there is any correlation between academic achievement and creativity.

STATEMENT OF THE PROBLEM

A study on creativity of standard XI students and its relationship to their academic performance.

OPERATIONAL DEFINITIONAL TERMS

Creativity

According to Webster's dictionary, the definition of creativity is artistic or intellectual inventiveness, creativity is marked by the ability or power to create or bring into existence to invest with a new form, to produce through imaginative skill, to make or bring into existence something new. The dimensions of creativity such as fluency, flexibility and originality are taken into consideration for the present study.

Academic Performance

"Dictionary" of education defines academic achievement as the knowledge attained or skills developed in school subjects, usually designated by test scores or by marks assigned by teachers or by both.

In this study, academic achievement is measured by the percentage of marks scored in X std public examination.

OBJECTIVES OF THE STUDY

- ★ To assess the creativity of XI standard students.
- ★ To study the difference in creativity of boys and girls.
- ★ To study the difference in creativity of students studying under different types of schools. (Government, Aided, Private Unaided)
- ★ To find out the difference in creativity of students based on their medium of instruction.
- ★ To find out the difference in creativity of students from different boards of education upto standard X.
- ★ To find out the relationship between creativity of students and their academic Performance.

HYPOTHESES

1. There is no significant difference between boys and girls in their creativity.
2. There is no significant difference in creativity of students studying in different types of schools. (Government, Aided, Private Unaided)
3. There is no significant difference in creativity of Tamil and English medium students.
4. There is no significant difference in creativity of students from different boards of education upto standard X.
5. There is no significant relationship between creativity and academic performance of XI standard student.

DELIMITATION

- ★ The sample was limited only to few schools.
- ★ The study is limited to the XI standard students only.
- ★ The region of study is restricted to the schools in Chennai city only.

METHODOLOGY

The sampling technique used for present study was random stratified sampling technique. The investigator selected 150 XI standard students from three State Board Higher Secondary schools and one Matriculation Higher Secondary School studying in Tamil and English medium consisting of both boys and girls.

Tool Used

The tool used was Passi's test of creativity. The verbal test which is part of the total battery of verbal and non verbal tests developed by B.K. Passi (1989) was taken for the present study. It included Seeing Problems Test, The Unusual Uses Test and The Consequences Test.

Collection of Data

Detailed instructions were given to the subjects of every school before administering the test. Response sheets were collected as soon as they were filled and scores were given according to the scoring key. Then it was subjected to statistical analysis.

DATA ANALYSIS

The collected data were tabulated and analysed. Differential analysis was made between groups using 't' and F tests. Correlation was found using Karl Pearson's Product Moment Correlation.

FINDINGS OF THE STUDY

Hypothesis 1 – There is no significant difference between boys and girls in their creativity.

Table 1

t-test for creativity based on Gender

S.No.	Gender	Sample	Mean	SD	t-value	P-value
1.	Male	75	47.81	20.207	0.875	0.383
2.	Female	75	44.83	21.561		

Table 1 shows that calculated p-value 0.383 which is greater than 0.05 level. Hence the null hypothesis is accepted. It is concluded that there is no significant difference between boys and girls in their creative ability.

Hypothesis 2 – There is no significant difference in creativity of students studying in different types of schools. (Government, Aided, Private Unaided)

Table 2

ANOVA for creativity based on type of school

S.No.	Type of School	N	Mean	SD
1.	Government	50	39.12	11.140
2.	Aided	50	37.56	19.630
3.	Private Unaided	50	62.28	20.614
4.	Total	150	46.32	20.878

S. No.	Source of Variation	Sum of Square	df	Mean Squares	F-value	p-value
1.	Between Groups	19164.960	2	9582.480	30.766	0.00
2.	Within Groups	45785.680	147	311.467		
3.	Total	64950.640	149			

Table 2 shows that the calculated p-value 0.00 which is less than 0.01 level. Hence the null hypothesis is rejected. There is significant difference in creativity of students studying under different types of higher secondary school.

Since p-value is found to be significant, Games Howell Post Hoc Test was conducted between three group combinations taken two at a time.

Table 3

Post Hoc Test for creativity of students based on type of school now studying

S.No.	Type of School	N	Mean Difference	Std error	p-value
1.	Government & Aided	50 50	1.56	3.530	0.877
2.	Government & Private Unaided	50 50	23.16	3.530	0.000
3.	Private Unaided & Aided	50 50	24.72	3.530	0.000

Table 3 shows that the calculated p-value for Government and aided school is 0.877 as observed from table 3 is higher than 0.05. Hence there is no significant difference between creativity of Government and Aided School Students.

The p-value for Government and Private Unaided, Private Unaided and Aided is 0.00 which is less than 0.01. Hence there is significant difference in creativity of Government-Private school students and Private Unaided and Aided School students.

Hypothesis 3 – There is no significant difference in creativity of Tamil and English medium students.

Table 4

t-test for creativity based on Medium of Instruction

S.No.	Medium	Sample	Mean	SD	t-value	p-value
1.	Tamil	50	39.12	11.140	3.810	0.00
2.	English	100	49.92	23.566		

Table 4 shows that the calculated p-value is 0.00 which is less than 0.01 level. Therefore the null hypothesis is rejected. It is concluded that there is a significant difference in creativity of Tamil and English medium students.

Hypothesis 4 – There is no significant difference in creativity of students from different boards of education upto Standard X.

Table 5

ANOVA for creativity of students from different boards of education upto std X

S. No.	Board upto Xth	N	Mean	SD
1.	State Board	94	37.03	14.075
2.	Matriculation	54	62.26	21.437
3.	CBSE	02	52.50	16.263
4.	Total	150	46.32	20.878

S. No.	Source of Variation	Sum of Square	df	Mean Squares	F-value	p-value
1.	Between groups	21904.865	2	10952.433	37.402	0.00
2.	Within groups	43045.775	147	292.828		
3.	Total	64950.640	149			

Table 5 shows that the calculated p-value 0.00 is less than 0.01 level. Hence the null hypothesis is rejected. There is significant difference in creativity of students from different boards of education upto std X. Since p-value is found to be significant, Games Howell Post Hoc Test was conducted between three group combinations taken two at a time.

Table 6

Post Hoc Test for creativity of students from different boards of education upto std X

S. No.	Type of School	N	Mean Difference	Std error	p-value
1.	State Board & Matriculation	94 54	25.23	2.922	0.00
2.	Matriculation & CBSE	54 02	09.76	12.322	0.751
3.	State Board & CBSE	94 02	15.47	12.228	0.578

Table 6 shows that the calculated p-value for State Board and Matriculation school students is 0.00 which is less than 0.01. Hence there is significant difference in creativity between students from State Board and Matriculation Schools. Matriculation School students had greater creativity than State Board School Students.

The p-value for Matriculation and CBSE school students is 0.751 which is greater than 0.01 and for CBSE and State

Board school students is 0.578 which is also greater than 0.05. Hence there is no significant difference between students from Matriculation and CBSE and State Board and CBSE Schools.

Hypothesis 5 – There is no significant relationship between creativity and academic performance of XI standard student.

Table 7

Correlation for Creativity and Academic Performance

Variable	N	Correlation	p-value
Creativity	150	0.254	0.002
Academic Performance	150		

Table 7 shows that the calculated p-value is found to be 0.002 which is less than 0.01 level. Hence the null hypothesis is rejected. There is a significant relationship between creativity and academic performance.

EDUCATIONAL IMPLICATIONS

- ★ Achievement and creativity are directly related. Students who have divergent thinking are highly creative in nature and thus their achievements in studies is also high.
- ★ Students who are studying in Private Unaided schools have higher creativity level than the Government and Government Aided school students. This may be because private school students have more opportunity in learning new things. They get more exposure in modern trends and techniques which enhance their creativity.
- ★ Matriculation students have higher creativity than students from other board. As Matriculation school students have more opportunities to take part in co-curricular activities and extra-curricular activities along with curricular activities which might promote their creativity.

CONCLUSION

The child who is trained to think creatively not only finds himself as a better acquirer of knowledge but also as a better user and producer of new knowledge. If creative thinking abilities are not developed during the formative period of child's life especially at the time when he is in school, he gets stunted and cannot then be properly developed at this stage. Acquisition of knowledge of a more complex nature will be no problem to him at all if creativity is developed during the early years of life.

Therefore the teacher should be very careful in selecting and giving the teaching learning process. His success as a teacher depends upon the suitability of learning process, which he selects to give to the students.

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ISSN 0973-6190

MENTAL HEALTH OF HIGHER SECONDARY STUDENTS IN CHENNAI

3

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INTRODUCTION

It is the right of every child to have a safe and healthy life and living. One feels happy when he/she gets an opportunity to realize his/her potential. In many ways home and school are responsible for a child's negative attitudes toward his or her own self leading to serious mental health problems. This ultimately results in the increase of anxiety and maladjustment behaviour in students. Mental Health stands for the health of the mind as Carter. V. Good in the Dictionary of Education (1952. p.263) has termed it as "the wholesome essence of the mind".

RATIONALE OF THE STUDY

Mental health is regarded as a condition of an individual, relative to his/her capacities and to his/her social environmental context. Mental hygiene includes all measures taken to promote and preserve mental health. Accordingly mental health is concerned with health of one's mind and it's functioning in the same way as the physical health is supposed to concern with the health of one's physical organs and their functioning. Parents, schools and society demands more marks from students which increases the stress and affects their mental health. Hence present study on Mental Health of Higher Secondary Students of Chennai city is conducted.

STATEMENT OF THE PROBLEM

Mental Health of Higher Secondary Students in Chennai

OPERATIONAL DEFINITION OF KEY TERM

Mental Health

According to Hadfield (2003), "Mental Health is the full and harmonious functioning of the whole personalities". In the present study, mental health refers to the Mental Health of Std XI students of Chennai city.

OBJECTIVE OF THE STUDY

★ To find out whether XI Standard students differ in their Mental Health with respect to the variations in some selected personal variables, namely gender, medium of instruction and school management type.

HYPOTHESIS

There is no significant difference in Mental Health among Standard XI students with respect to some selected personal

variables namely Gender, Medium of Instruction and School Management Type.

METHODOLOGY

Survey method is adapted in the present study. The sample for the study was selected randomly.

Sample

The sample consisted of 400 students of Standard XI drawn from Government, Government Aided, Corporation and Matriculation schools in Chennai city.

Tool Used

The Mental Health Battery (MHB) developed and validated by Arun Kumar Singh and Alphana Sen Gupta was adapted by the researcher. It is a battery of six tests (Part I – VI) which consists of 130 items.

Statistics used

Differential Analysis is used in the study.

DATA ANALYSIS AND INTERPRETATION

Critical ratios were computed to study the differences in mental health of the students owing to differences in selected personal variables namely gender, medium of instruction and type of family and the results are presented in Table 1

Table 1

't' Ratio for Mean Difference in Mental Health with regard to Gender and Medium of Instruction

Variable	Subsamples	Frequency	Mean	SD	df	Critical Ratio	Level of Significance
Gender	Boys	202	84.73	7.905	398	0.929	P > 0.01
	Girls	198	83.96	8.628			
Medium of Instruction	English	295	85.07	8.365	398	2.956	P < 0.01
	Tamil	105	82.32	7.673			

No significant difference is noted in Mental Health with respect to gender. This shows there is no gender bias at home and school. Significant difference is observed between English and Tamil medium students in their Mental health. English medium students are better in Mental Health than Tamil medium students. This may be due to the exposure of students in English medium schools.

Table 2

One – Way ANOVA for mean Difference in Mental Health with School Management Type

Variables	Subsamples	Frequency	Mean	Source	Sum of Squares	df	Mean Square	F Ratio	Level of Significance
School Management Type	Government	105	81.59	Between Groups	58000.010	3	1933.337	35.637	P<0.01
	Corporation	102	81.95						
	Aided	95	83.17	Within Groups	21483.287	396	54.251		
	Matriculation	98	90.96	Total	27283.287	399			

As the results of the one-way analysis indicates significant difference in Mental Health among the Higher Secondary Students, further analysis is done and the results are presented in Table 3.

Table 3

Significant difference in mental health among the Higher Secondary students with different school management type

Sub Samples (School Type)		Frequency	Mean	SD	df	Critical Ratio	Level of Significance
Govt Vs Aided	Govt	105	81.59	7.582	198	1.379	P > 0.01
	Aided	95	83.17	8.599			
Aided Vs Matric	Aided	95	83.17	8.599	191	7.742	P < 0.01
	Matric	98	90.96	4.953			
Matric Vs Govt	Matric	98	90.96	4.953	201	10.343	P < 0.01
	Govt	105	81.59	7.582			
Govt Vs Corp	Govt	105	81.59	7.582	205	0.357	P > 0.01
	Corp	102	81.59	7.818			
Aided Vs Corp	Aided	95	83.17	8.599	195	1.041	P > 0.01
	Corp	102	81.95	7.818			
Corp Vs Matric	Corp	102	81.95	7.818	198	9.690	P < 0.01
	Matric	98	90.96	4.953			

Table 3 shows that there is a significant difference ('t' = 7.742, P < 0.01) in mental health between Aided and Matriculation school students, favouring those from Matriculation schools. Thus students from Matriculation schools are having a better mental health than those from Aided schools. Comparing Matriculation schools and Government schools, there is a significant difference ('t' = 10.343, P < 0.01) in mental health among the students of Matriculation and Government schools, favoring those from Matriculation school. Thus students from Matriculation schools are having a better mental health than those from Government schools.

There is a significant difference ('t' = 9.690, P < 0.01) in mental health between Corporation and Matriculation school students, favouring those from Matriculation school. Thus students from Matriculation schools are having a better mental health than those from Corporation schools.

Thus students from Matriculation Schools posses the optimum mental health and students from Government schools posses the least mental health.

CONCLUSION

The purpose of the present investigation was to study mental health of the students of Standard XI with reference to some selected variables. This study is useful for the teachers to know the levels of mental health of the students and findings of this study may serve as a data base for further research. In the present study, it is found that English medium students possess better mental health than the Tamil medium students because of the encouragement and support given to them in English medium schools. The present study also shows that students from Matriculation schools possessed better mental health than Government, Corporation and Aided school students. This may be because of the exposure and encouragement given to the students in the classroom. This is not so in most of the Government, Corporation and Aided schools. Hence, more exposure and encouragement need to be given in all type of schools to enhance mental health of the students.

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ISSN 0973-6190

ATTITUDE - AN ESSENTIAL ELEMENT OF DEVELOPING SOFT SKILLS IN LEARNING MATHEMATICS

4

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INTRODUCTION

"Mathematics is the gate way and key of all the sciences" says Roger Bacon. Hence in the age of science and information technology the knowledge of mathematics is very much essential and useful. Mathematics helps to develop soft skills like self confidence, logical and critical thinking, self reliance, sense of appreciation, scientific attitude, problem solving etc. So every mathematics teacher should develop positive attitude towards learning mathematics among students. The positive attitude is helpful in improving up the thinking level of the students and plays a significant role in the development of different mental abilities.

REVIEW OF RELATED LITERATURE

The investigator has reviewed a few studies.

Amirtha Gowri and Mariammal (2011) investigated and found that college teachers had favourable attitude towards teaching.

Bindhu David and Shiny John (2011) examined and revealed that there is a positive correlation between life skills and attitude towards vocation.

Hemalatha and Venkataraman (2011) investigated and reported that sex has no role in forming attitude towards learning chemistry

Smitha and Sujatha Acharya (2010) conducted a study and found that the teacher have unfavourable attitude towards inclusive education for them.

Parvati S. Ghanti and Jegadesh (2009) examined that the teachers working in secondary schools do not differ significantly in their attitude towards teaching profession with respect to gender and type of school.

The National Council for Teaching Mathematics (NCTM, 2000) states that developing a positive attitude toward learning Mathematics is an important aspect of a student's learning experiences. Many studies have shown the importance of attitude leads to success in mathematics (Sliva, 2004, P25).

NEED AND SIGNIFICANCE OF THE STUDY

It is observed that pupils possessing positive attitude towards Mathematics would get more benefits of it when compared to those who lacked the positive attitude towards Mathematics. The positive attitude towards Mathematics helps in acquisition of desirable skills. So it is the duty of the mathematics teachers to nourish positive

attitude towards of students learning Mathematics.

A teacher who has taught even one day in a classroom realizes that a positive attitude toward learning is essential to be successful (Sliva, 2004, P73). The successful experiences lead to better achievement.

The findings of the study may help the Mathematics teachers to inculcate positive attitude among students towards learning Mathematics which will promote achievement in Mathematics. In turn, the teachers can help the teachers to stimulate confidence in learning Mathematics, realize the value of Mathematics, tune up interest in learning Mathematics and to adopt different methodology to enjoy learning Mathematics.

The IX standard students ought to create interest to improve academic achievement since they are appearing for the public examination in the next year. The present investigation differs from sample, variables, dimensions and tools used for data collection from the above studies.

OPERATIONAL DEFINITION TERMS

Soft skills

Soft skills refer to personality traits, social graces, communication skills, personal habits, friendliness and optimism that mark people to varying degrees.

Attitude

Attitude is defined as opinion, thinking, feeling, thought, view, position, approach, belief, mood, perspective, point of view (the-freedictionary.com/attitude)

Self-Confidence

Self confidence is essentially an attitude which allows us to have a positive and realistic perception of ourselves and our abilities. It is characterized by personal attitudes such as assertiveness, optimism, enthusiasm, affection, pride, independence, trust, the ability to handle criticism and emotional maturity (ezinearticles.com)

Value

Values are like truth, reflections of reality that are not obstructed by any kind of prejudice (Edutracks, Aug 2007)

Motivation

Motivation is something that prompts, compels and energizes an individual to act or behave in a particular manner at a particular time for attaining some specific goal or purpose (S.K.Mangal, 2005).

Enjoyment

It refers to students mental emotions which give enjoyment of beauty. This emotional setup helps the students enjoy and appreciate the beauty found in nature (answers.com/enjoyment).

STATEMENT OF THE PROBLEM

Attitude is an essential element of developing soft skills in learning mathematics.

OBJECTIVE OF THE STUDY

To find out significant difference if any in the attitude of XI standard students towards learning Mathematics and its dimensions like self-confidence, value, motivation and enjoyment with reference to the variables gender, type of family, domicile and type of institution.

HYPOTHESIS

There is no significant difference in the attitude of IX standard students towards learning mathematics and its dimensions with reference to the variables gender, domicile, type of family, and type of institution

METHODOLOGY

The investigator has adopted descriptive method with survey technique to solve the problem.

Population and Sample

The population of the study is the IX standard students in Rajapalayam. A sample of 150 students studying in IX standard in Rajapalayam has been drawn by simple random technique.

Tool used

A self constructed and validated Attitude scale with 3 points is used as a tool to gather data. The rating scale consisting of 40 items giving 10 items for each dimension self- confidence, value, motivation and enjoyment. For establishing validity the tool was given to a panel of experts. Based on their opinion some items were deleted and some of them were modified. The reliability of the tool was established using split-half method and found to be 0.71.

Statistics used

- ★ Mean and Standard deviation
- ★ t-test and F-ratio.

DATA ANALYSIS AND INTERPRETATION

Hypothesis1

There is no significant difference among IX standard students in their attitude towards learning Mathematics and its dimensions with respect to gender.

Table1

Difference among IX standard students in various dimensions of attitude towards learning mathematics with respect to gender

Dimensions	Boys		Girls		't' value	Result
	Mean	SD	Mean	SD		
Self -confidence	49.71	9.78	50.25	10.25	0.33	NS
value	47.17	9.94	**52.48**	9.94	**3.34**	**S**
Motivation	48.44	10.60	51.37	9.30	1.79	NS
Enjoyment	50.41	9.76	49.65	10.25	0.46	NS
Attitude-in total	48.79	1033	51.06	9.64	1.39	NS

(At 5% level of significance the table value is 1.96)

NS – Not Significant (Hypothesis accepted) S – Significant (Hypothesis not accepted)

From the above table it is inferred that there is a significant difference among IX standard students in attitude–value towards learning Mathematics with respect to gender.

Girls realize the value of Mathematics more than the boys. No significant difference is found between those students in self-confidence, motivation, enjoyment and attitude-in total.

Hypothesis 2

There is no significant difference among IX standard students in their attitude towards learning Mathematics and its dimensions with respect to domicile.

Table2

Difference among IX standard students in various dimensions of attitude towards learning Mathematics with respect to domicile

Dimensions	Rural		Urban		't' Value	Result
	Mean	SD	Mean	SD		
Self -confidence	48.21	9.25	50.72	10.24	1.45	NS
value	48.32	10.15	50.68	9.91	1.29	NS
Motivation	47.95	9.61	50.83	10.08	1.64	NS
Enjoyment	46.50	7.77	**51.41**	10.47	**3.15**	**S**
Attitude-in total	47.17	8.36	**51.14**	10.41	**2.44**	S

(At 5% level of significance the table value is 1.96)

NS – Not Significant (Hypothesis accepted) S – Significant (Hypothesis not accepted)

It is observed from the above table IX standard students differ significantly in attitude –enjoyment and attitude-in total with respect to domicile. The students from urban area enjoy in learning Mathematics and they have positive attitude towards learning Mathematics.

Hypothesis 3

There is no significant difference among IX standard students in their attitude towards learning Mathematics and its dimensions with respect to type of family.

Table 3

Difference among IX standard students in various dimensions of attitude towards learning mathematics with respect to type of family

Dimensions	Single		Joint		't' Value	Result
	Mean	SD	Mean	SD		
Self -confidence	51.06	9.45	45.37	11.16	2.50	S
value	50.65	9.39	47.17	12.12	1.43	NS
Motivation	50.83	10.08	50.68	8.87	1.34	NS
Enjoyment	50.68	8.87	47.04	13.71	1.34	NS
Attitude-in total	5.94	8.98	45.92	13.01	1.94	NS

(At 5% level of significance the table value is 1.96)

NS – Not Significant (Hypothesis accepted) S – Significant (Hypothesis not accepted)

The above table shows that there is a significant difference among IX standard students in attitude-self-confidence with reference to type of family. The students from nuclear family are confident in learning Mathematics.

Hypothesis 4

There is no significant difference among IX standard students in their attitude towards learning Mathematics and its dimensions with respect to type of institution.

Table 4

Difference among IX standard in various dimensions of attitude towards Mathematics with respect to type of institution

Dimensions	Category	Count	Mean	Sum of Squares	df	F- ratio	Result
Self -confidence	Govt.	50	47.56	1754.89	2	9.81	S
	Aided	50	54.84	13145.11	147		
	Matric	50	47.61	14900.00	149		
Value	Govt.	50	50.64	1121.66	2	5.98	S
	Aided	50	52.99	13778.34	147		
	Matric	50	46.38	14900.00	149		
Motivation	Govt.	50	49.24	244.86	2	1.23	NS
	Aided	50	51.80	14655.14	147		
	Matric	50	48.96	14900.00	149		
Enjoyment	Govt.	50	50.74	1000.69	2	5.29	S
	Aided	50	52.73	13899.31	147		
	Matric	50	46.53	14900.00	149		
Attitude-in total	Govt.	50	49.32	1323.79	2	7.17	S
	Aided	50	53.93	13576.21	147		
	Matric	50	46.75	14900.00	149		

(At 5% level of significance the table value is 3.04)

NS – Not Significant (Hypothesis accepted) S – Significant (Hypothesis not accepted)

It is evident from the above table that IX standard students differ significantly in self - confidence, value, enjoyment and attitude-in total with respect to type of institution. Comparing the mean scores aided school students have positive attitude towards learning Mathematics than their counter parts.

RESULTS AND DISCUSSION

★ There is significant difference in attitude-self-confidence in terms of type of family. When compared to the mean scores, the students from nuclear families are more confident in learning Mathematics than the students from joint families. These students have good learning environment at home and have more opportunities to spend more time on the subject involving web based games and this will lead to a deeper understanding of the subject.

★ There is significant difference in the attitude-value of high school students in terms of gender. When compared to the means scores, girl students realize the value of Mathematics than boy students. Because most of the girls learn Mathematics with understanding and hence they are able to use Mathematics both in their personal and academic life. Moreover girls are inspired by rewards and recognition which is a motivation to participate actively in the learning process. This finding contradicts the study by **N. Orhun (2007)** reported that attitude towards Mathematics was not dependent on gender.

★ There is significant difference in attitude-self-confidence, value, enjoyment and attitude-in total in terms of type of institution. When compared to the mean scores, the aided school students have positive attitude, more confident, realize the value of Mathematics and interested in learning Mathematics and hence enjoy Mathematics classes. The over load of the matriculation syllabus makes students lose their self-confidence, interest and they possess negative attitude towards Mathematics. Similar situation was faced by the government school students but the reason might be different. These students due to poverty, illiteracy of parents, low income of parents, family environment and lack of motivation may tend to lose the self-confidence and interest which lead to negative attitude towards learning Mathematics.

★ There is no significant difference among IX standard students in attitude of motivation towards learning Mathematics. Learning Mathematics needs the faculties like concentration, attention, mental abilities etc. Lack of these faculties and deficiency in teachers' motivational techniques may demotivate the students.

★ Significant difference is found among IX standard students in enjoyment with respect to domicile. Comparing mean scores shows that the students from urban area enjoy learning Mathematics and have positive attitude towards Mathematics than the students from rural area. The students from urban area have a lot of opportunities to study through mathematical exhibitions, films on mathematics, mathematical places and web resources which may stimulate interest. In urban areas they have the provision of improving memory, creativity, concentration, attention and speed of accuracy through private centers.

EDUCATIONAL IMPLICATIONS

★ Team work, self study and interaction with peer group can be catered to sustain confidence.

★ Parents play a key role in their children's learning. They should serve as a model for learning, determine the educational resources available at home, develop positive attitude towards the subjects and make them realize the values towards education.

★ Reward acts as a powerful motivator which may be in the form of certificate, letter etc. The reward should be presented specifically and promptly.

★ Mathematics debates and quiz contest may be endeavoured to enjoy learning mathematics.

★ Recreational activities such as puzzles, riddles, catch problems, mathematics fallacies, number games can be supplied to tune up the interest of the students.

CONCLUSION

The current study revealed that the aided school students and the students from urban area have positive attitude towards learning Mathematics. The positive attitude towards Mathematics helps in acquisition of desirable skills. Mathematics is an essential element of communication. Learning Mathematics develops many soft skills like skill of organizing data, analysis and skill of problem solving. In order to develop soft skills among students, positive attitude towards learning Mathematics is essential.

Learning Mathematics also nourishes the soft skills like self reliance, tolerance, open-mindedness, value, self-confidence, motivation, enjoyment and creative imagination. Soft skills help the students for better academic achievement and their selection of subjects for higher studies. A teacher of Mathematics can make the learning very interesting and exciting by changing the attitude of the students. Hence attitude is an essential element of developing soft skills in learning mathematics.

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ISSN 0973-6190

VALUE PERCEPTION AMONG B.Ed TEACHER TRAINEES IN KARUR DISTRICT

5

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INTRODUCTION

The term 'value' comes from the Lathin word, 'valere' which means 'to be worth'? 'to be strong'. The dictionary gives the following meaning: relative worth, utility or importance, degree of excellence, something intrinsically valuable. Value simply means something that has a price, something that has worth, something precious, and something dear; something one is ready to suffer for, sacrifice for and if necessary one is ready to die for it. Gandhiji. Every value component is a typical way of life that distinguishes one human being from the other.

According to Dr. S. Radhakrishnan "Civilizations are measured with the value they stand for, not the machines they invent and use". They are the individual's as well as the society's idea of what is desirable.

"To value something means primarily, to prize, to esteem, to appreciate, to estimate," Johh Dewey, It means the act of cherishing something, holding it dear and also the act of passing judgment upon the nature and amount of its value as compared to something else. Thus, the values we cherish determine what we do and why we do certain things.

NEED AND IMPORTANCE OF THE STUDY

Values are guiding principles of life which are conducive to all round development. They give direction and firmness to life and bring joy, satisfaction and peace to life. Values are like rails that keep a train on the track and help it more smoothly, quickly to life. A life without proper values will become chaotic and disastrous. It will be a boat without rudder. To guide our life in the right path and to embellish our behaviour with good qualities, we need values. Teachers have to play a predominant role not only in the intellectual development but also in the inculcation of the values among the students. Teacher trainees must equip themselves to inculcate the values. During their course of study they should develop their values so that in turn they can

inculcate the values among the students. Hence the study focuses to find the level of value perception among the B.Ed teacher trainees.

STATEMENT OF THE PROBLEM

A study on the acquired level of value perception among the B.Ed teacher trainees in Karur District.

OBJECTIVES OF THE STUDY

- ★ To find out the level of value perception among the B.Ed teachers trainees with respect to their gender, academic stream, locality.
- ★ To find out the significant difference in the level of value perception among the teacher trainees with respect to their gender, academic stream, and locality.

OBJECTIVES OF THE STUDY

To find out the acquired level of value perception among the B.Ed teachers trainees with respect to their gender, academic stream, and locality.

HYPOTHESES

1. There is no significant difference in the level of value perception among the B.Ed teacher trainees with respect to their gender, academic stream and locality.
2. There is no significant difference in the level of value perception among the B.Ed. teacher trainees with respect to their gender, academic stream and locality.

METHODOLOGY

Survey method was employed in the present descriptive study. Stratified random sampling technique was used. There are eight B.Ed Colleges in Karur District. Out of Eight colleges five colleges have been selected on simple random technique.

Sample

The B.Ed teacher trainees who have enrolled themselves to get their Bachelor of Degree in Education are the sample of the study. In the selected five colleges, from each college 15 male and 15 female students were selected on simple random sampling technique. Altogether 150 teacher trainees were selected as the sample for the study.

Tool Used

The researcher constructed the self developed tool "Questionnaire on Value perception." There are 30 questions under 5 categories of personal value, social value, moral value, educational value and national value. In order to standardize the tool researcher consulted with the educational experts for validity and the test retest method was used with 30 samples for pilot study. The reliability of the tool i.e., r = 0.87.

Table 1

Table showing the percentage analysis of the samples towards the level of value perception with respect to their Gender, Academic stream and Locality

Variable	Sub variable	Level of Value perception		
		High	Average	Low
Gender	Male	45 (60%)	18 (24%)	12(16%)
	Female	58 (77.3%)	13 (17.4%)	4(5.3%)
Academic stream	Science	37 (61%)	15 (24%)	9 (15%)
	Arts	66 (74%)	16 (18%)	7 (8%)
Locality	Urban	32 (79%)	6 (14%)	3 (7%)
	Rural	71 (65%)	25 (23%)	13(12%)
Overall percentage		103 (69 %)	31 (21%)	16 (10%)

*( ) indicates the percentage against the number of samples

Table 1 indicates the percentage analysis of the samples in the level of value perception. In the overall percentage of the level of value perception, the majority i.e. 69 percent of the B.Ed teacher trainees have high level. 21 percentages of them have average level and only 10 percent have low level of value perception.

Hypotheses Testing

Null Hypothesis 1 There is no significant difference in the level of value perception among the B.Ed teacher trainees with respect to their Gender.

Table 2

t test for the mean scores of level of value perception between male and female B.Ed teacher trainees

Gender	N	Mean	SD	t value	P value
Male	75	79.373	6.326	2.76	0.06
Female	75	82.080	5.622		

Table 2 shows that the calculated p value 0.06 is Greater than 0.05 and it reveals that there is a significant difference in the level of value perception between male and female students. Hence the stated hypothesis "There is no significant difference in the level of value perception among the B.Ed teacher trainees with respect to their Gender." is not accepted at 0.05 level.

Null Hypothesis 2 There is no significant difference in the level of value perception among the B.Ed teacher trainees towards the RTE Act with respect to their Academic stream.

Table 3

t test for the mean scores of level of value perception between Science and Arts Graduate B.Ed teacher trainees

Academic stream	N	Mean	SD	t value	P value
Science	61	80.049	6.494	1.12	0.26
Arts	89	81.191	5.836		

Table 3 shows that the calculated p value 0.26 is Greater than 0.05 and it reveals that there is a significant difference in the level of value perception between Science Graduates and Arts Graduate students. Hence the stated hypothesis "There is no significant difference in the level of value perception among the B.Ed teacher trainees with respect to their Academic stream." is not accepted at 0.05 level.

Null hypothesis 3 There is no significant difference in the level of value perception among the B.Ed teacher trainees with respect to their locality.

Table 4

t test for the mean scores of level of value perception between Rural and Urban B.Ed teacher trainees

Locality	N	Mean	SD	t value	P value
Urban	41	80.878	5.040	0.20	0.83
Rural	109	80.669	6.496		

Table 4 shows that the calculated p value 0.83 is Greater than 0.05 and it reveals that there is a significant difference in the level of value perception between Science Graduates and Arts Graduate students. Hence the stated hypothesis "There is no significant difference in the level of value perception among the B.Ed teacher trainees with respect to their locality." is not accepted at 0.05 level.

FINDINGS

★ The majority i.e., 69 percent of the B.Ed teacher trainees have high level of value perception. 21 percentages of them have average level and 10 percent have low level of value perception.

- ★ Male and female B.Ed teacher trainees differ in their level of value perception.
- ★ Science Graduates and Arts Graduate B.Ed teacher trainees differ in their level of value perception.
- ★ Urban and rural B.Ed teacher trainees differ in their level of value perception.

EDUCATIONAL IMPLICATION

The values may be inculcated through the lessons, extracurricular activities, and daily prayers, role model of the teacher educators and the programmes are being organized by them. When the values are inculcated along with the subject definitely their behaviour, futuristic thinking and personality of the B.Ed teacher trainees will be enhanced. Hence, the teachers are the sole authority to inculcate the values among the students.

Eventually, the researcher realized that value education must be incorporated in the syllabus and it must be evaluated by means observation, assigning project and conducting workshop in the B.Ed colleges. So, that the emerging teachers keep in their mind to inculcate the value among the future Generations.

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ISSN 0973-6190

ASSESSING PHYSICS METACOGNITION OF GRADUATE STUDENTS - AN INSTITUTIONAL WISE ANALYSIS

6

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INTRODUCTION

Physics is the branch of science that deals with the nature and natural phenomenon. Physics is sometimes said to be the 'fundamental science', because each of the other natural sciences deals with particular type of material systems that obey the laws of physics (Ramesh, 2006). The most common objective of learning physics is acquisition of knowledge. But the meaningful learning is occurring only when the acquired knowledge improves the conceptual understanding of the learner. Nowadays, the physics major students may learn the physics concept by memorizing not by understanding. This may be due to the exam oriented learning and lack of thinking capacity. This lack can be rectified by enriching the metacognitive knowledge in physics. According to Flavell (1979), Metacognition is defined as "*Knowledge and cognition about cognitive phenomena*." Metacognition essentially means cognition about cognition. It refers to second order cognitions: thoughts about thought, knowledge about knowledge, or reflections about actions. Metacognition has been found to be a critical factor in contributing to students' learning of physics (Gita & John, 2012). More importantly, metacognitive development leads students to independent learning, sustained knowledge and to motivate the learning for high achievement.

NEED FOR THE STUDY

One of the main objectives of education is to promote higher order cognitive skill such as problem solving, decision making, self-evaluation, organizing and transforming the information and so on (Kathiravan, 2011). The concepts of Physics are very difficult to understand without basic thinking skill. This skill can be acquired through physics metacognition. Metacognition enables students to regulate their learning activities. It helps the students to plan, monitor and evaluate thinking processes and products, and it also equip the students about what information/ skills they have, when, why and how to use them. Costa (1984) emphasized that if the teachers do pay attention to "thinking about thinking", then the students will learn the process of perception, understanding and the link between mental processes. The past three decades of research in Physics problem solving has been focused

on cognition and metacognition. It has been recommended that metacognitive skills should be taught to the students to help them solve Physics problems (Mestre, 2001).Therefore educational institutions and the instructors are needed to prepare students to enable the metacognition while learning Physics, which helps the learners to achieve more in the field of Physics. In this context it is imperative to assess the Physics metacognition of graduate physics students.

OPERATIONAL DEFINITIONAL OF TERM

Physics metacognition refers to learn physics with and for metacognition. It means learners think about their own thinking regarding learning the concepts, relating the concepts, doing practical and project, solving the problem, draw a diagram and assessment the learning activities before, during and after.

OBJECTIVES OF THE STUDY

- ★ To find out the level of Physics metacognition of the graduate students with regard to nature of college and type of college.
- ★ To find out whether there is any significant difference among men's, women's and co-education college students in their Physics metacognition.
- ★ To find out whether there is any significant difference among government, autonomous, aided and self-finance college students in their Physics metacognition.

HYPOTHESES

1. There is no significant difference among men, women and co-education college students in their Physics metacognition.
2. There is no significant difference among government, autonomous, aided and self-finance college students in their Physics metacognition.

METHODOLOGY

The researcher used the survey method for the present study. For data collection, the investigator used the Physics Metacognition Inventory (PMI) which is comprised of 51 items and it is developed by the investigator and research supervisor (2013) to measure Physics metacognition of the physics major students. Physics metacognition consists of two components namely knowledge of cognition and regulation of cognition (Schraw 1998). The investigator has selected the sample by using simple random sampling technique. It comprises 636 final year undergraduate Physics students from twenty two Arts and Science colleges under Manonmaniam Sundaranar University jurisdiction. The data were analysed by using Mean, Standard Deviation, 'F' test and Tukey test.

DATA ANALYSIS AND INTERPRETATION

The data were subjected to statistical treatment leading to the findings which may satisfy the requirements of the objectives of the study.

Table 1

Level of Physics metacognition of the graduate students with regard to nature of college

Dimensions	Nature of the College	Low		Moderate		High	
		No	%	No	%	No	%
Knowledge of cognition	Men's	3	13.0	16	69.6	4	17.4
	Women's	30	9.6	222	70.7	62	19.7
	Co-education	63	21.1	185	61.9	51	17.1
Regulation of cognition	Men's	8	34.8	13	56.5	2	8.7
	Women's	28	8.9	220	70.1	66	21.0
	Co-education	60	20.1	184	61.5	55	18.4
Physics Metacognition	Men's	7	30.4	14	60.9	2	8.7
	Women's	23	7.3	232	73.9	59	18.8
	Co-education	60	20.1	194	64.9	45	15.1

Table-1 shows that the graduate students have moderate level of Physics metacognition with regard to nature of college.

Table 2

Level of Physics metacognition of the graduate students with regard to type of college

Dimensions	Type of the College	Low		Moderate		High	
		No	%	No	%	No	%
Knowledge of cognition	Government	6	14.6	26	63.4	9	22.0
	Autonomous	36	16.2	160	72.1	26	11.7
	Aided	32	15.8	122	60.4	48	23.8
	Self-Finance	22	12.9	115	67.3	34	19.9
Regulation of cognition	Government	5	12.2	27	65.9	9	22.0
	Autonomous	34	15.3	157	70.7	31	14.0
	Aided	36	17.8	124	61.4	42	20.8
	Self-Finance	21	12.3	109	63.7	41	24.0
Physics Metacognition	Government	4	9.8	30	73.2	7	17.1
	Autonomous	34	15.3	164	73.9	24	10.8
	Aided	33	16.3	127	62.9	42	20.8
	Self-Finance	19	11.1	119	69.6	33	19.3

Table-2 shows that the graduate students have moderate level of Physics metacognition with regard to type of college.

Ho : 1

There is no significant difference among men's, women's and co-education college students in their physics metacognition.

Table 3

Difference among men's, women's and co-education college students in their physics metacognition

Dimensions	Source of Variation	Sum of Squares	Degrees of freedom	Variance estimated	Calculated 'F' value	Remarks at 5% level
Knowledge of cognition	Between	1706.412	2	853.206	6.646	S
	Within	81269.404	633	128.388		
Regulation of cognition	Between	1634.272	2	817.136	5.466	S
	Within	94636.797	633	149.505		
Physics Metacognition	Between	7434.270	2	3717.135	7.559	S
	Within	311296.912	633	491.780		

(at 5% level of significance the table value of 'F' is 3.01, S-Significant)

Table-3 shows that there is a significant difference among Physics major students from men, women and co-education colleges in their knowledge of cognition, regulation of cognition and Physics metacognition.

Ho : 2

There is no significant difference among government, autonomous, aided and self-finance college students in their Physics metacognition.

Table 4

Difference among government, autonomous, aided and self-finance college students in their physics metacognition

Dimensions	Source of Variation	Sum of Squares	Degrees of freedom	Variance estimated	Calculated 'F' value	Remarks at 5% level
Knowledge of cognition	Between	980.014	3	326.671	2.518	NS
	Within	81995.802	632	129.740		
Regulation of cognition	Between	1677.781	3	559.260	3.737	S
	Within	94593.288	632	149.673		
Physics Metacognition	Between	6041.562	3	2013.854	4.070	S
	Within	312689.620	632	494.762		

(at 5% level of significance the table value of 'F' is 2.62, S- Significant, NS- Not Significant)

Table-4 shows that there is no significant difference among Physics students from government, autonomous, aided and self-finance colleges in their knowledge of cognition. But there is a significant difference among Physics students from government, autonomous, aided and self-finance colleges in their regulation of cognition and physics metacognition.

FINDINGS

The descriptive analysis, the investigator found that 8.7% of men college students, 18.8% of women college students and 15.1% of co-education college students had high level of Physics metacognition. Further, 17.1% of government college students, 10.8% of autonomous college students, 20.8% of aided college students and 19.3% self-finance college students had high level of Physics metacognition.

'F' test results shows that there is a significant difference among Physics major students from men's, women's and co-education colleges in their knowledge of cognition, regulation of cognition and Physics metacognition. The Tukey test result shows that, the Physics major students from women's college are better than the students from co-education college in their knowledge of cognition, regulation of cognition and Physics metacognition and it also shows that the Physics students from women's college are better than the students from men's college in their regulation of cognition. This may be due to the reason that the female students are more keenness, and they always towards the goal oriented with higher order cognition.

The 'F' test also shows that there is a significant difference among Physics students from government, autonomous, aided and self-finance colleges in their regulation of cognition and Physics metacognition. The Tukey test result also shows that, the Physics students from self-finance and government colleges are better than the students from aided and autonomous colleges in their regulation of cognition and Physics metacognition. This may be due to the majority of the female students are studying in self-finance colleges and also the self-finance colleges has spent more money for enriching the quality of their institution which is used to promote the learning quality of the students.

CONCLUSION

Metacognition is an important component in Physics education. To become an expert in Physics, one has to acquire strategic knowledge of when to apply what basic concepts and principles and how to apply them (Redish, 1994). The metacognitive skills, not only make the students to understand about the concept better, but can inculcate greater interest towards Physics. This study was attempted to show the valuable use of metacognition in Physics. Through this study the graduate Physics students expressed their thoughts about their cognitive system and their cognitive abilities in Physics. This study reveals that the Physics students have moderate level of Physics metacognition. Hence the teachers should teach the importance of metacognitive activities and try to enrich it to their students. The metacognitive activity in the Physics laboratory has increased the metacognition

in a better way (Rebecca & Linder, 2007). This study reveals that the co-education college students are not better in their metacognition. So, the co-education college teachers should make the collaborative environment to their students. The aided and autonomous colleges make necessary arrangement to improve the metacognition of their student.

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ISSN: 0973-6190

VALUE PATTERN OF HIGH SCHOOL STUDENTS STUDYING IN DIFFERENT SCHOOLS A COMPARATIVE STUDY

7

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INTRODUCTION

Human beings cannot live without society, as such society and environment have unique role in the information of values. The behaviour of a person reflects his values. Without values the life is meaningless. Therefore society is term as moral power. A belief or feeling that someone or something is worthwhile. Values define what is of worth: what is beneficial, what is harmful. Values are like vehicles, modes of our being and form of our behaviour which makes supremely. Values are standard to guide our action, judgments and attitude. Values are the priorities individuals and societies attach to certain belief, experience and objects in deciding how they live and what they shall treasure A value is a statement of one's personal belief. Values are required, inherited and inculcated. They reflect an approach to life, a view of life. Any human activity, thoughts or ideas, feelings, sentiments or emotions that could promote self development of the individual in all its dimensions could be said to constitute a value. Values affect our decisions, goals and behaviour. We get values in our homes, school, friends, T.V, church, music, books, families, culture, employers, time period in which they were raised values from within are love, kindness, mercy, sympathy, empathy. Values to be practiced are punctuality, discipline, obedience, behaviour, conduct and character. Values give direction and consistency to behaviour. Values also set the direction for one's life. So far John Dewey (1937) is concerned he has viewed the value with three parameters i.e

1. Effective or emotional aspect – the idea of prizing, cherishing and holding dear.
2. A cognitive or thinking aspect: to arrive at an improved judgment the relation between thinking in relation to the existing situations are made.
3. Psychometric or doing aspect: here action to be taken in the light of value which we improve.

Worth and valueless means worthless. So value is something which is good**.** Ready (1979) says that value is perfection, it is a medium of self discovery and an instrument of progress the concept of values are both absolute and relative in its implication. Value is highest and main instrumentation towards better living. Truth, Righteous conduct, Peace, Love and Non-violence are the five universal values that manifest the moral, spiritual and social refinement of human relationship in various exigencies of life-situation and circumstances.

TYPES OF VALUES

1. Truth 2. Righteous conduct 3. Peace 4. Love 5. Non-violence

Truth

The Greek word for "truth" is *aletheia*, which literally means to "un-hide" or "hiding nothing." It conveys the thought that truth is always there, always open and available for all to see, with nothing being hidden or obscured. The Hebrew word for "truth" is *emeth*, which means "firmness," "constancy" and "duration." Truth generally consists in its correspondence with facts and is pre-existent to its discover. When a child is told to "speak the truth, he understands that his speech must correspond to facts without any alteration and manipulation. Truth, therefore, is objective and external where correspondence is extrinsic to it and is ascribed by the knowing mind. Truth is not deception. Of course, it could be true that someone is being deceptive, but the deception itself isn't truth. All truth is relative to the individual. Such a definition implies an everlasting substance and something that can be relied upon. From a philosophical perspective, there are three simple ways to define truth: 1. Truth is that which corresponds to reality.2. Truth is that which matches its object. 3. Truth is simply telling it like it is. First, truth corresponds to reality or "what is." It is real. Truth is also correspondent in nature. In other words, it matches its object and is known by its referent. For example, a teacher facing a class may say, "Now the only exit to this room is on the right." For the class that may be facing the teacher, the exit door may be on their left, but it's absolutely true that the door, for the professor,is on the right.

Truth also matches its object. It may be absolutely true that a certain person may need so many milligrams of a certain medication, but another person may need more or less of the same medication to produce the desired effect. This is not relative truth, but just an example of how truth must match its object. It would be wrong (and potentially dangerous) for a patient to request that their doctor give them an inappropriate amount of a particular medication, or to say that any medicine for their specific ailment will do.

In short, truth is simply telling it like it is; it is the way things really are, and any other viewpoint is wrong. A foundational principle of philosophy is being able to discern between truth and error, or as Thomas Aquinas observed, "It is the task of the philosopher to make distinctions."

Facts and ideas coincide to produce truth which is eternal, immutable and universal, hence desirable. But if truth depends on our comprehension as to establish correspondence, would it not be contingency in correspondence may vary from person to person, situation to situation, conditions to conditions, so much so. Another criterion of truth offered is that whatever consistent, is true. All statically operations aim at consistency, reliability and objectivity and hence , are truth. Here, consistency among observations is the note and is called consistency or coherence theory of truth.

Righteous Conduct

This value represents the level of excellence that can be achieved from the domain i.e., physical Truth in action is righteous conduct. The action takes place on the physical domains and behind each action there is a thought. Righteous conduct envelops all walks of and is conductive not only to one's own well being but the well being of all. This realization is based on the fact that everyone in this realization is a link in the chain of creation and just on each link has to be sound condition for effective functioning of the universe. The different components of this value like cleanliness hygienic living, dignity of mutual labour, power utilization of time, regularity punctuality, self help, self support, obedience, duty and loyalty to duty, simple living, honesty prudence, respect for other, reverence of old age, service to others, self confidence, self-reliance, initiative, resourcefulness, courage, leadership, faithfulness, justice, team work, team spirit, equality and self sacrifice.

Peace

Truth and righteousness should necessarily leads to peace which is a positive condition implying settled and harmonious co-existence of man and society, and of man and nature; it is a precondition of development, progress, and prosperity, for one and all, for all times and places. Peace is a state of bliss (ananda), mental equipoise, tensionless. The value represents the level of excellence that can be achieved from emotional domain of the personality. Peace is the end purpose of all human endeavors us right or wrong whatever a man thinks or does it with the in tension of attaining peace and happiness. Peace would certainly become a far more achievable entity. If one were to know the domain of personality at which it required. The components of this value are like abstinence, freedom from the six deadly sins, cultivation of the six disciplines, self control, self respect, and awareness of the dignity of the individuality, power of concentration, meditation and peace.

Love

Love is what makes the world go; it is the glorious manifestation of what is true, good and beautiful and represents the serenity of mind and soul in an attractive manner. love is central to their way of life, love is through love, fact, life is love and love is life; life is through love, fact life is love, and love is life much in the same manner as God love and love is god. Love helps one to actualize oneself.

The psychic domain of human system is the source of love. Love is the expression of the individual divine within and is the power of soul. It is the mightiest of all forces in the world and is truly representative of human nature. Love is not an emotion. It is the forms of energy which each individual transmits and receives every movement. It affects all human nature. Love is not an emotion. It is a form of energy which each individual transmits and receives every movement. It affects all human life. It is a peculiar possession, which grow with sharing. Life become simpler and more enjoyable when one experience that love is selflessness and lives by giving and forgiving. Its components are sincerity,

kindness to animals, sympathy, friendship, patriotism, devotion or bhakti, tolerance and humanism.

Non-Violence

Gandhiji introduce dimension when he said that as against the violence of the brute, there is another force called non-violence which is the rule of human being non-violence, therefore, represents a higher state of evolution and sophistication. According to Gandhiji non-violence is the law of our species and that dignity of man requires obedience to a higher law of strength of the spirit. This is what is called moral courage wherein one transcends physical brute force and acts in accordance with his inner nature which is spiritual. Non-violence therefore is the crux of social interaction wherein there is no played offensiveness in word, thought and deed. Non-violence invariably entails truth as the two are inseparably linked. God is truth; non-violence is mean to achieve it. Non-violence or Ahmisa is the goodness of conduct and means. Gandhi said, 'the basic principle of non-violence rests on that what holds good in respect of oneself equally applies to the whole universe.

SIGNIFICANCE OF THE PROBLEM

It is important for the enrichment of education that youth of the country are equipped with basic human values. This process has to be started right from the school education. Therefore it is important that student should be well aware of human values, issues and problems. The best place to start value education is schools. It is informative stage of the child that desirable attitude can be easily developed. The present investigation is to access the general attitude of high school students towards towards basic values.

REVIEW OF RELATED STUDIES

Sambhi (1988) conducted a study on the value pattern and some personality variables of the students studying in three institutions. She found that students studying in Sri Sathya Sai Hr. Sec School where education on human values is directly given had the highest score on a cast of human values and this score was significantly higher than the score of the students of other two schools.

Rao (1950) studied various preference and personality pattern. The result shows that education, maturity, social and economic background, sex temperament and mental makeup have a great influence on the sense of values.

Sigmon (1984) discuss the essence as well as the impartation of moral education. The ultimate aim of moral education is proper conducted or morality. Related topics such a values, ethics, philosophical under pinning's of morality and theories of moral development are also described. Rapid cultural change causes alarm and this stairs interest in values and moral education . There is disagreement on how to teach morality or whether it can even be taught at all.

OBJECTIVES OF THE STUDY

- ★ To compare the students of Private and Government School on the value of truth.
- ★ To compare the students of Private and Government on the value of 'Righteous Conduct'
- ★ To compare the students of Private and Government on the value of 'Peace'.

- ★ To compare the students of Private and Government on the value of 'Love'.
- ★ To compare the student of Private and Government on the value of non-violencce.
- ★ To compare the student of Private and Government on the value pattern.

HYPOTHESES

1. High school students studying in Government and Private School will not differ significantly on the value of 'Truth'.
2. High school students studying in Government and Private School will not differ significantly on the value of 'Right Conduct'.
3. High school students studying in Government and Private School will not differ significantly on the value of peace.
4. High school students studying in Government and Private School will not differ significantly on the value of Love.
5. High school students studying in Government and Private School will not differ significantly on the value of non-violence.
6. Value pattern of students studying in the two types of schools will not be different.

METHODOLOGY

Sample

The study was conducted on 9th class students of Jammu City. For selecting the sample of school a list of Government and Private Schools of Jammu City was prepared and one school out of the list of Government School and other school from the list of private school were selected randomly. Finally Government School Mubarak Mandi and Shiksha Niketan, Jammu constituted the sample value inventory was administered on 9th class students of both schools. Analysis was made in respect of 50 students only selected randomly from two classes. The list of schools and students were used for the purpose of the analysis is provided in Table-1

Table 1

Table showing the Constitution of sample

S. No.	Name of School	No. of Students
1.	Government Hr. Sec. School Mubarak Mandi, Jammu	25
2.	Shiksha Niketan Hr. Sec. School, Jeevan Nagar	25

Description of the tool: The value inventory prepared and standardized by Sambhi (1998) was used in the present study.

This tool consist of 50 questions, which relates to five basic human values: - Truth, Righteous conduct, Peace, Love and Non-violence.

There are 10 questions for each of the five values. The question is multiple choice questions. The stem is followed by three alternative answers. The stem is followed by three alternative answers. Out of which only one is correct or most appropriate answer. Each right answer was given score

of one and wrong answers a score of zero. The score thus obtained were tabulated and analyzed.

Data collection

The value inventory was administered on the selected sample of students and the students were apprised of the purpose of the exercise being conducted. To ascertain the value reflection and value pattern of Government and Private School students, they were ensured that the information provided by them will be kept confidential and will only be used for the purpose of present investigation. Rapport was established with the students soon get desired responses on different items.

ANALYSIS AND INTERPRETATION OF DATA

Table 2

Comparison of Two schools on the value of Truth

S. No.	Sample Group	N	M	SD
1.	Private School Students	25	6.28	1.95
2.	Government School Students	25	5.44	1.78

Table 2 shows that the number, Mean and SD of two students. The no. of Private School student is 25, mean is 6.28 and SD = 1.95 the number of Government School students is 25, mean is 5.44 and SD is 1.78. A higher mean (6.28) in respect of the Government School students indicate that a trend of better reflection of Private School students on the value of truth.

Table 3

Mean of two schools and t value

Paris of Comparison	Mean difference	df	t-Value
Private School Student and Government School Student	.84	48	1.59

Table 3 shows the difference between mean of two schools students and the t-value. The mean difference is .84 and t-value is 1.59. The Difference was not found significant even at .05 level therefore null hypothesis is accepted in the present case.

Table 4

Comparison of Two Schools on The Value of Right Conduct

S. No.	Sample Group	N	M	SD
1.	Private School Students	25	5.40	1.94
2.	Government School Students	25	4.52	1.29

Table 4 shows the number, mean and S.D. of school students. The number of Private School is 25, mean is 5.40 and S.D is 1.94 the number of Government school students is 25, mean is 4.52 and S.D is 1.29. A higher mean is 5.40 in Private School student respect of Government school students indicate a trend of better reflection of Private schools students on the value of conduct.

Table 5

Difference between Mean, Degree of Freedom and t-Value

Paris of Comparison	Mean difference	df	t-Value
Private School Student Government School Student	.88	48	1.89

Table 5 shows that the difference between mean of two schools students and t-value the mean difference is .88 and t-value is 1.89. The difference neither was nor found significant even at .05 level therefore null hypothesis is accepted in the present case.

An analysis of the table. Reveals that private school student's rate non-violence at first place is given to love, third place to truth fourth place to right conduct and last place to peace.

Value pattern of the Government School

Table 6

Showing the Mean and Rank of the Government School Students on Five values

Value	Truth	Love	Peace	Right Conduct	Non-Violence
Mean	5.44	5.16	4.96	4.52	1.08
Rank	I	II	III	IV	V

An analysis of the table reveals that Government school students have given first rank to truth, second place to love, third place to given to peace, fourth rank to right conduct and last rank to non-violence value patterns of the Private and Government School.

Table 7

Comparison of value pattern of Private and Government School Students

Rank	Private School	Government School
1.	Non- Violence	Truth
2.	Love	Love
3.	Truth	Peace
4.	Right conduct	Right Conduct
5.	Peace	Non-Violence

Table 7 shows the students studying in Private School have given Rank I to the value of Non-Violence. Other Rank order is Love II Truth III, Right Conduct IV and peace V.

In case of Government School Student the first rank is given to truth followed by Love II, Peace III, Right IV and Non volume V.

It can be further concluded from table that only two values ie, love and right conduct occupy the same rank in both schools and remaining three of occupy different ranks. Therefore it is implies that private and Government School differ in their value pattern.

FINDINGS

- ★ High school students of Private and government school was not found to differ significantly on the value of truth, as the t-value was not significant even at .05 level. This indicates that not only the institution climate but the overall area also affects the value of the child. Since students of both schools are expressed to more or less similar environment outside the school therefore no significant difference has been found.
- ★ On the value of righteous conduct also no significant difference was observed. Hence it can be concluded that students from the two schools did not differ significantly on the value of righteous conduct.
- ★ Similarly there is no significant difference in the two groups of the students on the value of peace.
- ★ On the value of love the mean of Private School was (6.36) and Government School was 5.16 t-value was 2.25. Which is significant at .05 level of significance? It indicates that Private School schools and Government school students' difference significantly on the value of non-violence.

Since the mean score is higher in respect of students of private schools. It can therefore be concluded that student studying in private schools can be rated higher than their counter part in Government Schools in respect of value of non-violence.

Therefore it is concluded that the value scores of students of private schools are higher than Government School students. Possible reason for his might be that the learning experience provided to the students for inculcation of these values

are greater both in quality and quantity as compare in the government owned schools. It has also been observed that the private schools enforce the discipline more strictly than the government schools and in most of the cases they have been found to follow values of one or the other reason.

In the light of such investigation we can change our modes and methods of teaching so that society gets maximum benefit out of it.

CONCLUSION

Values are guides to behaviour and give direction to life. Educational values play a significant role in the life of man. Though them one is able to lead his personnel and social life successfully. Education develops a sense of discrimination between good and bad. This discrimination between good and bad. This discrimination is based on values and these values are tested in schools.

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ISSN: 0973-6190

INTERFACE BETWEEN PERSONALITY AND ACADEMIC ACHIEVEMENT: A CORRELATION STUDY OF B. Ed. TRAINEES OF CALCUTTA UNIVERSITY

8

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INTRODUCTION

Personality indicates the adjustment ability with the environment or external behaviour of a person in respect to his external environment. According to Allport "The personality is a dynamic organization within the individual of that psychophysical system that determines his unique adjustment to his environment" (Mangal, 2012). The common fact is that personality itself is unique and it is a dynamic organization of all the various psychological and physical traits or determinants of a person. The personality traits are expressed through the person's behaviour. Generally most of the traits are unstable in nature and their expression depends upon the situation in which a person involves himself/herself. Personality traits are a set of similar behaviour that differentiates one person from other and these traits are interdependent with each other. The personality of a person is hard to measure accurately because only a few traits can be measured as they are expressed through human behaviour. A teacher's personality is reflected through his/her effective teaching learning processes because good personality increases the adjustment ability with the existing environment. Personality is not something passive, rather creative organization that helps in an effective adjustment with the environment. Singha (2000) made a study on the personality patterns of urban and rural female high school teacher and found that rural teachers were more truthful, non-violent and restrained from theft in comparison to their urban counterpart. Budhisagar and Sansanwal (1991) made a study on effect of treatment, intelligence, attitudes towards teaching profession and their interaction on achievement of B. Ed. Students and found that the attitude towards the teaching profession did not correlate significantly with achievement. Choudhury in 1990 made a study on personality of the teacher and classroom discipline and found that a significant correlation was present between the personality factors of the teachers and classroom discipline.

In 2013 Calcutta University revised its B.Ed. curriculum within which personality development is introduced as a general practical portion. National policy on education (NPE) 1986 has said that "No people can rise above the level of its teachers". The intention of the University is to increase the personality level among the trainees because these trainees will

be the future teacher in our nation. Only a teacher with good personality can be able to overcome the entire hurdle of class room situations and will able to continue his classroom transaction smoothly. The personality levels of the trainees need to be developed through group discussion on concerned matters of teaching learning process, involvement in academic activities of the trainees and through mock interviews.

As personality is one of the determinants of academic achievement, hence its development would definitely improve the academic achievement of the trainees. The present study wants to find out the relationship between achievement and personality of the B.Ed trainees of Calcutta University. By knowing this, an attempt can be made to bring improvement in personality among the trainees so that they can better contribute for their students.

OBJECTIVES OF THE STUDY

- ★ To know the personality of the B.Ed. trainees in relation to strata and gender under Calcutta University.
- ★ To know the academic achievement in respect to their gender and strata under Calcutta University.
- ★ To know if any relationship exists between personality and academic achievement of the trainees.

HYPOTHESES

1. There is no significant difference between the male trainees and female trainees in their personality.
2. There is no significant difference between the male trainees and female trainees in their academic achievement.
3. There is no significant difference between the urban trainees and the rural trainees in their personality.
4. There is no significant difference between the urban trainees and the rural trainees in their academic achievement.
5. There is no significant correlation between the personality and academic achievement of B.Ed. trainees.

METHODOLOGY

Population

All the B.Ed. students passed in 1st semester under Calcutta University revised curriculum in 2013-14 sessions are the population for the present study.

Sample

100 students as sample were drawn randomly from the B.Ed. colleges under the Calcutta University. 50 trainees were from the rural region and 50 trainees were from the urban region. Out of 100 trainees, 50 male and 50 female.

Tools and Techniques

Dimensional Personality Inventory (DPI) made by Mahesh Bhargava is used to measure the personality. This inventory only measures the six dimensions of personality, viz, Activity-Passivity, Enthusiastic-Non-enthusiastic, Assertive-Submissive, Suspicious-Trusting, Depressive-Non-depressive, and Emotional instability and Emotional stability. Each trait is measured by 10 items and each item contains three alternative responses– 'yes', 'undecided', and 'no'. The value of 'yes' is to be scored as

2, 'undecided' and 'no' are to be scored as 1 and 0 respectively. The summed raw score is to be taken as personality score here. The achievement score is obtained from the results of the semester examination.

Variable

Two types of variables are taken here:

Major variable: Personality and Academic achievement.

Categorical variable : Gender (Male and Female).

Strata (urban and rural)

DELIMITATIONS OF THE STUDY

The study is delimited to

- The B. Ed trainees of the Calcutta University
- 100 trainees of rural and urban region

DATA ANALYSIS AND INTERPRETATION

Ho_1- There is no significant difference between the male trainees and female trainees in their personality.

Table 1

Significant difference between male and female B.Ed trainees in their personality

Gender	Mean	P-value	Significance (2 tailed)	Significant status
Male trainees	30.06	0.02	0.05 Level	S
Female trainees	30.75			

S (Significant) NS (Not significant)

Table 1 shows that calculated value of p=0.02 (p<0.05). Hence the null hypothesis H_{01} is rejected. It can be said that there is a significant difference between male and female B.Ed. trainees in their personality.

Ho_2- There is no significant difference between the male trainees and female trainees in their academic achievement.

Table 2

Significant difference between male and female B.Ed trainees in their academic achievement

Gender	Mean	P-value	Significance (2 tailed)	Significant status
Male trainees	72.60	0.04	0.05 Level	S
Female trainees	73.83			

Table 2 shows that calculated value of p=0.04 (p<0.05). Hence the null hypothesis H_{02} is rejected. It can be said that there is a significant difference between male and female B. Ed. trainees in their academic achievement.

Ho_3- There is no significant difference between the urban trainees and the rural trainees in their personality.

Table 3

Significant difference between urban and rural B.Ed trainees in their personality

Strata	Mean	P-value	Significance (2 tailed)	Significant status
Urban	30.58	0.30	0.05 Levels.	NS
Rural	30.27			

Table 3 shows that calculated value of p=0.30 (p>0.05). Hence the null hypothesis H_{03} is retained. It can be said that there is no significant difference between urban and rural B. Ed. trainees in their personality.

Ho_4- There is no significant difference between the urban trainees and the rural trainees in their academic achievement.

Table 4

Significant difference between urban and rural B.Ed trainees in their academic achievement

Strata	Mean	P-value	Significance (2 tailed)	Significant status
Urban	73.54	0.39	0.05 Level	NS
Rural	73.02			

Table 4 shows that calculated value of p=0.39 (p>0.05). Hence the null hypothesis H_{04} is retained. It can be said that there is no significant difference between urban and rural B. Ed. trainees in their academic achievement.

H_{05}- There is no significant correlation between the personality and academic achievement of B.Ed. trainees.

Table 5

Correlation between the personality and academic achievement of B.Ed trainees

Variable	r-Value	Significance (2-tailed)	Correlation status
Personality	.607	0.01 Level	S
Achievement			

Table 5 shows that the r-value is significant at 0.01 levels. Hence the null hypothesis (H_{05}) is rejected. It is concluded that there is significant correlation present between the personality and academic achievement of B.Ed trainees.

FINDINGS

- ★ The female students have the higher personality than the male students because female students have greater mean value (30.75) than the mean value (30.06) of male students.
- ★ The female students have the greater academic achievement than the male students because they have greater mean value (73.83) than the male students (72.60).
- ★ The personality of the students does not differ in relation to their strata. The overall academic achievement of both the rural and urban students is same.
- ★ From the study it is clear that the personality and academic achievement have a positive correlation between them.

CONCLUSION

Personality is a controlling unit of learning because most of the traits of personality directly or indirectly control the learning process of a learner. In this study, six traits were taken that are essential for teaching learning processes in a typical classroom context. The study shows that personality and academic achievement are highly correlated with each other and their correlation is positive. This indicates that trainees with high personality have good academic achievement and vice versa. The study also indicates that personality does not depend upon the strata. The study also shows that both the male and female trainees have low range of personality. This indicates that the process of personality development is not dealt properly. It can be said that more attention is to be given for the improvement of personality level of the B.Ed. trainees. Then intention of Calcutta University is to be fulfilled properly.

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ISSN 0973-6190

COGNITIVE STYLE OF PROSPECTIVE TEACHERS IN MALAPPURAM DISTRICT

9

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INTRODUCTION

Cognitive styles refer to the level of organization which is more generator than specific structures fundamentals to perception, memory and judgment/ addresses the manner in which an individual will approach specific tasks and solve the problem. Cognitive styles are patterns of though and behaviour it influences learning and problems solving techniques. It reflects the individuals personality and performance. These are always related to mental behaviours habitually applied by an individual to solve problem and cognitive styles is the way by which information is obtained stored and utilized. Cognitive styles like perception remembering problem solving concaving retrieving intelligence etc. Influence the behaviour of teacher in teaching process. These are the factors which are responsible to mould not only teacher behaviour but also student's behaviours, learning, thinking reasoning memory, character, and personality

DIMENSION OF COGNITIVE STYLE

★ **Systematic style**

An individual identified as having a systematic style is one who rates high on the systematic scale and low on the intuitive scale. The systematic style is associated with logical, rational behaviour that uses a well-defined step-by-step approach to thinking, learning, and overall plan for problem solving.

★ **Intuitive style**

An individual who rates low on the systematic scale and high on the intuitive scale is described as having an intuitive style. Someone, whose style is intuitive, uses an unpredictable ordering of analytical steps when solving a problem, relies on experience patterns, and explores and abandons alternatives quickly.

★ **Integrated style**

A person with an integrated style rates high on both scales and is able to change styles quickly and easily. Such style changes seem to be unconscious and take place in a matter of seconds. In fact, integrated people are often referred to as problem seekers because they consistently attempt to identify potential problems as well as opportunities in order to find better ways of doing things.

★ **Undifferentiated style**

An individual rating low on both the systematic and the intuitive scale is described as having undifferentiated cognitive behaviour. Such a person appears not to distinguish or differentiate between the two style extremes; i.e.; systematic and intuitive and, therefore, appears not to display a style. In fact, in a problem-solving or learning situation, he or she may exhibit receptivity to instructions or guidelines from outside sources. Undifferentiated individuals tend to be withdrawn, passive, and reflective and often look to others for problem-solving strategies.

★ **Split style**

An individual rating in the middle range on both the systematic and the intuitive scale is considered to have a split style involving fairly equal (average) degrees of systematic and intuitive specialization. However, people with a split style do not possess an integrated behavioural response; instead, they exhibit each separate dimension in completely different settings; using only one style at a time based on the nature of their tasks or their work groups. In other words, they consciously respond to problem-solving and learning situations by selecting appropriate style

NEED FOR THE STUDY

Cognitive style is an aspect of overall personality and cognitive processes. It is a bridge between cognition or intelligence measures and personality measures (Grigorenko & Sternberg, 1997; Cheema & Ridding, 1991). Cognitive styles are constructs developed to describe perceptual traits of individuals, have their origins in studies of human cognition in the differential perspective (Lemes, 1988). A wide range of individuals difference exist at any age levels of student teachers. Each student perceives, think, remember and solve problem according to his or her own unique style. In this regard cognitive style is important.

STATEMENT OF THE PROBLEM

Cognitive style of prospective teachers in Malappuram district.

OBJECTIVES OF THE STUDY

★ To find out the cognitive style of prospective teachers in total and in dimensions such as (a) Systematic style; (b) Intuitive style; (c) Integrated style; (d) Undifferentiated style (e) Split style

★ To find out the difference if any in the cognitive style of the prospective teachers in total and in the dimensions such as Systematic style, Intuitive style, Integrated style, Undifferentiated style, Split style with respect to the following variables (a) Gender; (b) Educational qualification

★ To find out the difference if any in the cognitive style between social science and English prospective teachers in total and in the dimensions such as Systematic style, Intuitive style, Integrated style, Undifferentiated style, Split style.

METHODOLOGY

Sample

The sample for the present study was prospective teachers in Malappuram district. Stratified random sampling was adopted

Tool used

For collection of data the investigator have been used Cognitive Style Inventory (CSI) constructed and standardized by Praveen Kumar Jha in 2001.

Statistical techniques used

- Percentage analysis
- t test

Delimitation of the study

★ The sample is restricted to 100 prospective teachers of social science and English doing B.Ed

★ Only limited variables were taken for this study.

★ The study has laid focus cognitive styles in preferable manner as it do not concentrate on the nature of each and every style of the prospective teacher.

DATA ANALYSIS AND INTERPRETATION

Table 1

Cognitive style of prospective teachers in total and in dimension

S. No.	Dimensions	Low		Medium		High	
		No.	%	No	%	No	%
1.	Total	15	15.00	65	65.00	20	20.00
2.	Systematic style	14	14.00	86	86.00	0	0.00
3.	Intuitive style	26	26.00	55	55.00	19	19.00
4.	Integrated style	18	18.00	60	60.00	22	22.00
5.	Undifferentiated style	12	12.00	83	83.00	5	5.00
6.	Split style	15	15.00	85	85.00	0	0.00

Table 1 shows that 20% of the students are having better cognitive style, 65% medium and 15% low

Table 2

Significant difference between prospective teachers with UG and PG with integrated style and split style

S. No.	Dimension	Variables	Category	N	M	SD	t value	Remarks
1.	Total	Gender	Male	32	18.344	2.174	0.507	Not significant
			Female	68	18.522	2.396		
		Qualification	UG	52	18.096	2.733	1.915	Not significant
			PG	48	18.958	1.683		

S. No.	Dimension	Variables	Category	N	M	SD	t value	Remarks
2.	Systematic style	Gender	Male	32	4.375	0.599	0.699	Not significant
			Female	68	4.265	0.964		
		Qualification	UG	52	4.192	1.001	1.325	Not significant
			PG	48	4.417	0.672		
3.	Intuitive style	Gender	Male	32	18.344	2.174	0.507	Not significant
			Female	68	18.522	2.396		
		Qualification	UG	52	3.885	0.933	0.320	Not significant
			PG	48	3.833	0.656		
4.	Integrated style	Gender	Male	32	2.688	1.014	0.116	Not significant
			Female	68	2.662	1.066		
		Qualification	UG	52	2.462	1.134	2.133	significant
			PG	48	2.896	0.895		
5.	Undifferentiated style	Gender	Male	32	3.406	0.785	0.732	Not significant
			Female	68	3.279	0.855		
		Qualification	UG	52	3.212	0.927	1.379	Not significant
			PG	48	3.438	0.704		
6.	Split style	Gender	Male	32	4.125	0.927	1.840	Not significant
			Female	68	4.471	0.757		
		Qualification	UG	52	3.476	0.732	2.368	significant
			PG	48	3.054	0.928		

Table 2 shows that there is significant difference between prospective teachers with UG and PG with integrated style and split style.

Table 3

Significant difference between Social Science and English teachers in undifferentiated style and Systematic style

S. No.	Dimension	Category	N	M	SD	t value	Remarks
1.	Total	Social science English	50 50	18.860 18.160	2.720 1.793	1.519	Not significant
2.	Systematic style	Social science English	50 50	4.780 3.820	0.576 0.841	6.659	Significant
3.	Intuitive style	Social science English	50 50	3.900 3.820	0.854 0.767	0.493	Not significant

S. No.	Dimension	Category	N	M	SD	t value	Remarks
4.	Integrated style	Social science English	50 50	2.740 2.600	1.163 0.917	0.669	Not significant
5.	Undifferentiated style	Social science English	50 50	3.140 3.500	0.895 0.728	2.207	Significant
6.	Split style	Social science English	50 50	4.300 4.420	0.877 0.777	0.724	Not significant

Table 3 shows that there is significant difference between social science and English teachers in undifferentiated style and Systematic style.

MAJOR FINDINGS

- ★ It is found that 20% of the students are having better cognitive style, 65% medium and 15% low**.**
- ★ There is significant difference between social science and English teachers in undifferentiated style and Systematic style**.**
- ★ There is significant difference between prospective teachers with UG and PG with integrated style and split style

EDUCATIONAL IMPLICATIONS

- ★ Teachers should learn to recognize the difference in cognitive style orientation,to build on students strengths and avoid telling stylistic differences lead to discriminating practices or personality clashes.
- ★ Suitable service teaching courses should be given in teachers which will enable them to teach science according to cognitive style of their pupils
- ★ It is possible by helping students to identify their own style of learning it may be possible to train them to capacities on their strength and develop the weaker parts of their learning style.

SUGGESTIONS FOR FURTHER RESEARCH

- ★ Similar study can be conducted with predominant one group of gender is encouraged.
- ★ Similar study can be conducted taking into account other variables among secondary and primary school teachers.
- ★ A variety of learning content presentation methods addressing learners 'different cognitive styles should be employed (i.e., visuals, video, audio, interactive exercises etc.) with well-guided instructions and scaffolding activities.
- ★ Administration should supervise properly the needs of the children and performance of the teachers. They should take proper action to improve it if there is need to improve.
- ★ The school and college should have guidance and counselling centre for the students to solve their psychological and social problems.
- ★ The government should also improve the policies, schemes and interventions to improve the quality of education.
- ★ Similar study can be analyzed by different statistical techniques for verifying the results.

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ISSN 0973-6190

COMPARATIVE STUDY OF WARDS OF EMPLOYED AND UNEMPLOYED WOMEN WITH RESPECT TO THEIR MENTAL HEALTH

10

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INTRODUCTION

Healthy mind rests in healthy body. In order to have healthy mind, proper physical health of body needs to be essential. In order to have good soul of students, their body deserved to be in healthy state. World Health Organisation (WHO) had defined health *as,* "Good health does not confine itself with physical condition free of ill health or anaemic state but it refers to better state of physical, mental and social well being. Thus health can be studied in two categories. (1) Physical Health, (2) Mental Health

If Physical Health of any person contaminates then immediately symptoms could remarkably noticed for which the person might have to approach any doctor, but in case of Mental Health, if anything goes wrong, it can hardly be noticed by others and so it is difficult to overcome such health without any time lapsation. The present research subject is concerned with the wards of employed and unemployed women. It has been noticed that there is remarkable effect on mental health of wards of employed and unemployed women and what could be the nature of such ill mental health. Main cause seemed to be failure of poor performance in School/College Examinations, Worries, Undue Stress of examination, which directly reflect in mental health.

Researches on under mental health conducted in India and abroad have confined to certain limited areas some of the studies are reviewed below.

Agashe (1991) Study of the mental health of player and non player the correlation analysis related that IG was not significant related to any variables. The expression was positively related to mental health SES was very weakly related to mental health similarly result emerged from Anova.

Anand (1999) A Study of higher school students, the mental health of the adolescents their academic achievement and the educational and occupational status of parents were positively related.

Das (1989) A study of mental health of teacher serving in primary school. The study relevant the majority of teachers did part time job far more income. The difference pay scale created among teacher.

STATEMENT OF THE PROBLEM

Comparative Study of Wards of Employed and Unemployed Women with Respect to Their Mental Health.

HYPOTHESES OF THE STUDY

1. There is no significant difference between the mental health of wards of employed and unemployed women studying in 9th class.
2. There is no significant difference between the mental health of boys of employed and unemployed women studying in 9th class.
3. There is no significant difference between the mental health of girls of employed and unemployed women studying in 9th class.
4. There is no significant difference between the mental health of boys and girls studying in 9th class of employed women.
5. There is no significant difference between the mental health of boys and girls studying in 9th class unemployed women.

METHODOLOGY

Tool Used

Survey method was adopted for the present study.

Tool Used

Test developed by Dr. Aurnkumar Singh and Dr. Aparna Sen Gupta's (1987) has been used.

Sample

The survey sample collection of been obtain of 2000 wards of employed and employed women. From 28 school distributed in 14 Tahsil of Amravati District has been collected.

DATA ANALYSIS AND INTERPRETATION

Hypothesis – 1

There is no significant difference between the mental health of wards of employed and unemployed women studying in 9th class.

Table 1

Mental Health of the wards of employed and unemployed women studying in 9th Class

Variables	N	M	SD	't' value	Level of significance
Mental health of the wards of employed women	1000	85.45	35.6966	1.02	0.05
Mental health of the wards of unemployed women	1000	86.75	19.1076		0.01

Table 1 depicts that the calculated 't' value is 1.02 which is not significant at 0.05 and 0.01 level of level of significance. This shows that there is no significant difference between the mental health of wards of employed and unemployed women. Thus the null hypothesis is accepted difference between the mean value is due to sampling error.

Hypothesis – 2

There is no significant difference between the mental health of boys of employed and unemployed women studying in 9th class.

Table 2

Mental health of the boys of employed women and unemployed women of 9th Class

Variables	N	M	SD	't' value	Level of significance
Mental health of the boys of employed women	500	89.99	24.4748	2.28	0.05
Mental health of the boys of unemployed women.	500	89.09	18.2802		0.01

Table 2 shows that the calculated value is 2.28 which is found to be significant at 0.05 level of significance. It is clear that there is a significant difference between the mental of the boys of employed women and unemployed women at 0.05 level of significance. The null hypothesis is rejected. Hence we can say that the mean value shows that the mental health boys of employed women possess good health compared to the unemployed women mental health.

Hypothesis – 3

There is no significant difference between the mental health of girls of employed and unemployed women studying in 9th class.

Table 3

Mental health of wards of women of employed and unemployed women studying in 9th class

Variables	N	M	SD	't' value	Level of significance
Mental health of the girls of employed women	500	84.91	44.1907	0.22	0.05
Mental health of the girls of unemployed women.	500	84.43	19.6445		0.01

Table 3 shows that the calculated value 0.22 which is found to be not significant at both levels of significance. It is inferred that there is no significant difference between the mental health of girls studying in 9th class of employed and unemployed women. Hence the above hypothesis is accepted.

Hypothesis – 4

There is no significant difference between the mental health of boys and girls studying in 9th class of employed women.

Table 4

Comparison of Boys and Girls of employed women studying in 9th class mental health

Variables	N	M	SD	't' value	Level of significance
Mental health of the boys of employed women	500	85.99	24.4748	0.47	0.05
Mental health of the girls of employed women.	500	84.91	44.1907		0.01

Table 4 shows that the calculated value 0.47 which is found to be not significant at 0.05 and 0.01 levels of significance. Hence it is inferred that there is no significant difference between the mental health of boys and girls studying in 9th class of employed women. Hence the above hypothesis is accepted.

Hypothesis 5

There is no significant difference between the mental health of the boys and girls studying in 9th class unemployment women.

Table 5

Comparison of Boys and Girls of unemployed women studying in 9th class about mental health

Variables	N	M	SD	't' value	Level of significance
Mental health of the boys of unemployed women	500	89.09	18.2802	3.88	0.05
Mental health of the girls of unemployed women.	500	84.43	19.6445		0.01

Table 5 depicts that the calculated 't' values is 3.88 which is found to be highly significant at 1 percent level and 5 percent level of significance. It is found that there is a significant difference between the mental health of boys and girls studying in 9th class of unemployed women. The mean value shows that the boys possess higher level of mental health than the mental health of girls of unemployment women. Hence the null hypothesis is rejected.

CONCLUSION

- ★ Mental health of the wards of Employed women and Unemployed Women, showing their mental health to be equivalent.
- ★ Mental health of the Boys of Unemployed women is better than that of the Boys of Employed women.
- ★ Mental health of the Girls of Employed women and Unemployed Women, showing their mental health to be equivalent.

★ Mental health of the Boys of Employed women and Unemployed Women, showing their mental health to be equivalent.

★ Mental health of the Boys of Unemployed women is better than that of the Girls of Unemployed women.

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ISSN 0973-6190

A STUDY ON NEED FOR ACHIEVEMENT OF X CLASS STUDENTS IN RELATION TO ACHIEVEMENT IN MATHEMATICS

11

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INTRODUCTION

Mathematics has been the backbone of our civilization. It is no exaggeration to say that mathematics is an exact science which is playing an important role in various walks of life (papola, 2001). Mathematics holds a unique place in society. It is a living and flourishing branch of culture as a discipline and a service subject it pervades all aspects of human life. It is a universal means of communication .The National Policy on Education (NPE, 1986) stressed the importance of mathematics in general and suggested that 'it should be visualized as the vehicle to train the child to think, reason, analyze and articulate logically'.

According to National Council for teachers of Mathematics (NCTM, 2000) those who understand and can do mathematics will have significantly enhanced opportunities and options for shaping their future. National Curriculum Frame Work (NCF, 2005) aimed at equipping students with basic computational ability to think and reason mathematically, to purse assumptions to their logical conclusions and handle abstraction, as the society is moving in to a technological era, which needs people with sound mathematical skills.

Through the world is mathematically inclined, a great majority of students in schools feel it as a more abstract subject. Certain psychological factors like aptitude, attitude, motivation, intelligence, personality traits, sex, locality, social class, management of schools etc., will affect achievement in mathematics.

Students' performance in school is a topic of great concern to parents, teachers, policy makers, researchers and students puts a lot of pressure on the state holders .It needs to be regarded as a function of two characteristics 'skill' and 'will' and these must be considered separately because possessing the skill alone may not ensure success if will is lacking and vice-versa. Thus both of them need to be fostered among students.

Academic achievement

Academic achievement refers to the knowledge attained or skills developed in the school subjects in which students have

taken instruction, usually designed by test scores, marks or grades assigned to the students on the basis of their performance in the achievement test. According to dictionary of psychology (Chaplin, 1961) "Academic achievement is the level of attainment of proficiency in academic work as evaluated by teachers or by standard tests or by a combination of both" Soleiman Neghad and Shahraray (2001) defined that "academic achievement is the degree of academic learning by the person". According to Chowdhury and Pati et.al. (2011), academic achievement is defined by examination marks, teachers given grades and percentiles in academic subjects.

Motivation

Motivation has been designed in numerous ways. Motivation is the forces acting either on or within a person to initiate behaviour. In the field of psychology, human motivation has long been studied as a way to explain an individual's behaviour. Motivation has two pre-requisites: The desire and determination to achieve something not withstanding any obstacles one might meet along the way. Motivation is derived in different ways in the rate of achievement motivation. According to Hannula (2004) motivation is a potential to direct behaviour that is built in to the system that controls emotion. This potential may be manifested in cognition emotion and / or behaviour.

Need for achievement or achievement motivation

Achievement motivation is an important factor which can be presumed as a prerequisite for attaining excellence in all walks of life refers to a pattern of actions and feelings connected to achieving some internalized standard of excellence in performance.

According to MC Clelland and Atkinson (1953) Achievement motivation may be associated with a variety of goals but in general the behaviour adopted will involve activity which is directed towards the attainment of some standard of excellence.

According to International Encyclopedia of social Sciences (1968) need for achievement / n-achievement is an important determinant of aspiration, effort, and persistence when an individual expects that his/her performance will be evaluated in relation to some standard of excellence. Such behaviour is called achievement-oriented.

NEED FOR THE STUDY

Motivation to achieve high is one of the key factors in successful accomplishment of a task. Its role in academic field attracted many researchers to study the influence of achievement motivation in academic achievement. Achievement motivation (need) to achieve as an acquired tendency inspire students and make them strive and achieve in academic to the best of their abilities. In mathematics subject the tendency of students will help them to learn even difficult concepts. It helps the students with limited abilities in maths to learn to the best of their abilities and even disinterested students can be motivated towards the subject of maths is this urge is induced.

Focus on students achievements in maths efforts to improve success of students have been increased in today's school education. Students' motivation to achieve is generally regarded as one of the most critical determinants of success and achieving higher grades in examination.

X class is the terminal stage of high school education. Achievement in maths is very much valued by the students, parents to choose higher education / career for future. All the stake holders put efforts to increase achievement in mathematics. They try to create an urge and interest among students. Need for achievement or achievement motivation is one such psychological factor that throws much light on achievement in mathematics. To what extent X class students are motivated to achieve? Is there any relationship between achievement in maths and need for achievement? Answers to these questions need to be explored.

REVIEW OF RELATED LITERATURE

Studies of Shrivastava (1974), Contractor (1977), Gandhi(1982), Singh (1986), Ramhariya (2003), Vamadevappa (2003), Brajesh kumar Sharma, K.B. Subramaniam and U.L. Narayana (2006),Eric Zhi Fengue LIV and Chun Hung LIN (2010), Shazli Hasan Khan (2013) found significantly that achievement motivation was significantly and positively related to academic achievement. Dasaee (1978), Amaranath (1980), Aman Singh Sisiodiya (2006), Kiran Bala Varma (2006) Showed no relationship between academic achievement and achievement motivation. The above equivocal results with respect to the influence or relationship between achievement motivation for maths and achievement in maths press the need for further exploration of the relationship between need for achievement in maths.

STATEMENT OF THE PROBLEM

A Study on need for Achievement of X Class Students In Relation to Achievement in Mathematics.

OBJECTIVES OF THE STUDY

- ★ To find out X class students level of achievement in Mathematics.
- ★ To examine whether boys and girls of X class students differ significantly in their achievement in Mathematics.
- ★ To explore whether X class students hailing from urban and rural localities differ significantly in their achievement in Mathematics.
- ★ To find out the overall achievement motivation or need for achievement of X class students towards Mathematics.
- ★ To assess whether there exists any significant difference in the overall achievement motivation of X class boys and girls towards Mathematics.
- ★ To assess whether there exists any significant difference in the

achievement motivation of urban and rural students towards Mathematics.

HYPOTHESES

1. Different subgroups of X class sample of subjects in general would have a high level of achievement in Mathematics.
2. Boys and girls would not differ significantly in their overall achievement.
3. Urban and rural students would not differ significantly in their achievement in Mathematics.
4. Different subgroups of Ss would have significant high levels of maths achievement motivation.
5. Boys and girls would not differ significantly with regard to their maths achievement motivation.
6. Urban and rural students would not differ significantly in their maths achievement motivation.

METHODOLOGY

Variables studied

In this study need for achievement or achievement motivation in Mathematics which is a physiological trait was considered as an independent variable and sex, locality were studied as demographic variables. Achievement in maths is the dependent variable.

Tool used

In the present study the investigator adopted the standardized tool of Eric Zhi Fengu LIU and Chaun Hung LIN (2010) to find out the relationship between achievement motivation and achievement in maths. The tool had content validity, intrinsic validity, cross validities and reliability was 0.88.

Sample

For the present study the sample was selected by adopting stratified random sampling procedure. A total of 360 X class students were selected. Sample was taken in equal number with respect to sex and locality (i.e.) 180 from each criterion.

Data collection

After talking the permission from the heads of the institutions, the achievement motivation scale was administered to the sample of students individually. Achievement in maths by the Ss was recorded from school records. Marks obtained in unit tests and quarterly and half-yearly examinations were recorded and the aggregate percentage of the above said examinations were taken as the measure of achievement in Mathematics.

DATA ANALYSIS AND INTERPRETATION

The data was analyzed by using relevant statistical techniques like mean, standard deviation (SD) and 't' test.

RESULTS AND DISCUSSION

Table 1

Means and SDs of Achievement in Maths of different subgroups of Students and results of t test

Group	N	M	SD	't' value
Whole group	360	72.38	26.58	
Boys(B)	180	71.54	25.51	
Girls(G)	180	73.21	23.03	0.64
Urban(U)	180	66.66	23.52	
Rural (R)	180	78.09	23.92	4.58**

** 't' value significant at 0.01 levels.

Table 1 shows that the mean achievement score in maths of the whole group was 72.38 and its SD was 26.38. From the mean score it could be said that the group as a whole ha above an average level of performance in maths subject. However, there are wide variations among the subjects as SD was 26.58. It means that there students with different levels of achievement i.e. some scoring very high in maths and some scoring low in the subject leading to above average level of performance in maths.

From these results it could be stated that students have perceived the significance of maths. Students recognized that maths subject will help them to choose future course or career that is oriented towards.

From the table it is found that mean maths achievement score of boys was 71.54 while it was 73.21 for girls. The SD's of boys and girls were 25.51 and 23.03 respectively. From the mean scores coupled with the value, it is said that girls achieved better than boys in maths. However, this difference is not significant at 0.05 levels. Hence it could be concluded that there is no significant difference in boys and girls maths achievement.

The maths achievement scores of individuals belonging to urban and rural localities were analyzed. From the table 1 it is found that the mean achievement in maths of urban students was 66.66 and their SD was 23.52, while they were 78.09 and 23.95 respectively for rural student. From the mean scores it could be seen that students from rural localities scored higher than their urban counter parts. From 't' value which is 4.58, it could be stated that there is a significant difference between urban and rural student in their achievement in maths. Therefore it can be stated that rural students performed significantly higher than the urban students in maths subject.

Table 2

Means and SDs of the overall Achievement Motivation of different sub groups of students towards mathematics and results of t test

Group	N	M	SD	't' value
Whole group	360	146.70	15.90	
Boys(B)	180	144.30	10.64	2.854**
Girls(G)	180	149.54	19.75	
Urban(U)	180	149.17	5.61	2.97**
Rural(R)	180	144.25	31.53	

Note: ** 't' value significant at 0.01 levels.

Table 2 shows that mean of overall achievement motivation scores SD's of the whole group as well as different subgroups of Ss towards maths. It could be seen from the table that the mean overall achievement motivation score of the whole group was 146.7 which is indicating high level of achievement motivation of X class students towards maths.

The mean achievement motivation scores of boys and girls were 144.30 and 149.54. These results indicating that both the sexes were at high level of achievement motivation towards maths. The 't' value 2.854 is significant at 0.05 level. This shows that girls had far more achievement motivation towards Mathematics than boys.

Similarly it was noticed that when the students were clarified as urban and rural depending on the locality to which they belong, both groups of Ss exhibited a significant high level of achievement motivation towards maths. The mean overall achievement motivation of urban students was 149.17 and their SD was 5.61, while they were 144.25 and 31.53 for rural students. The 't' value is 2.97 is significant at 0.01 level. This indicates that urban and rural students differed significantly in their overall maths achievement motivation.

CONCLUSION

- ★ The group as a whole and above average level of performance in maths. Hence, the first hypothesis, Different subgroups of X class sample of subjects in general would have a high level of achievement in Mathematics was accepted.
- ★ No significant sex difference was noticed for achievement in maths. Therefore, the second hypothesis boys and girls would not differ significantly in their overall achievement was accepted.
- ★ Significant urban, rural differences were found in maths, the achievement

of X class students, from rural localities performed significantly higher than urban students. So the third hypothesis Urban and rural students would not differ significantly in their achievement in mathematics was rejected.

★ The group as a whole and also per different sub groups (ie) the variables involved in the study had significant high level of achievement for maths. So the fourth hypothesis different subgroups of Ss would have significant high levels of maths achievement motivation was accepted.

★ An examination of the mean students achievement motivation scores of Ss classified as boys and girls showed a significant sex difference in achievement motivation, where girls had a significant for higher level of achievement motivation than boys for maths subject. Therefore the fifth hypothesis Boys and girls would not differ significantly with regard to their maths achievement motivation was accepted.

★ In the present investigation urban students had significantly far higher level of achievement motivation for maths than rural students. As such the sixth hypothesis Urban and rural students would not differ significantly in their maths achievement motivation was also rejected.

EDUCATIONAL IMPLICATIONS

★ Teachers can use different methods of teaching to create interest among students and to remove phobia related to maths.

★ Teachers can guide practice of solving problems by the students under their close supervision.

★ Teachers can encourage co-operative learning strategies among students in class room set up.

★ Peer tutoring, mentoring systems can also be adopted by teachers to help the backward students in maths.

★ The teacher's attitude and enthusiasm will create better environment for the development of achievement motivation in students.

SUGGESTIONS FOR FURTHER RESEARCH

★ This study is confined to only X class students, similar type of study will be worthwhile by covering the students of all classes of high school level (i.e.) from VI to IX classes

★ The present study is confined to limited number of variables like sex and locality. There are many more variables like management of schools, social class, medium of instruction, their intelligence, self- concept, self- confidence, test anxiety, level of concentration etc which influence maths achievement motivation. If all such variables are studied, it will be useful in predicting the most influencing psychological factors in maths achievement motivation and maths achievement.

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