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Dr. (Sr.) Christina Augustine  
Managing Editor & Publisher  
Santhom Journal of EDU RACE

## EDITOR'S NOTE

**Santhom Journal of Edu. RACE** is an international peer-reviewed journal publishing research studies conducted in Indian and internationally to inform educational researchers, as well as educators, administrators and policy makers, about issues of contemporary concern in education. In the present educational scenario, role of the teacher is very high. Through facilitating students to engage in effective learning experiences the teacher helps students to equip for determining the 'destiny of India'. For doing such an attempt teachers need to be updated with current discoveries and research findings.

Considering these facts, **Santhom Journal of Edu. RACE** is trying its best to disseminate the results of various educational researches done currently. It publishes original peer-reviewed analyses spanning the field of educational research across various sub fields and disciplines and different levels of education.

The present volume of the journal brings to its readers twelve articles pertaining to different aspects of educational domain. It includes articles on Obesity and Associated Psychological Variables of Adolescents at Plus Two Level, Relationship between Linguistic Intelligence and Achievement in Mathematics of Students at Secondary Level in Kerala, Developing Truth and Love among Higher Secondary School Students, Female Students' Preference for Online Counselling of Human Immunodeficiency Virus in Federal College of Education, Kano, Effectiveness of Activity Oriented Pedagogy Implemented in Kerala, Encountering Cross-cultural Curricular Content: Platform for Developing New Pedagogical Perspectives for Teaching Diverse Students, A Theoretical Background of the Education of Differently abled Children – from Segregation to Inclusion, Outcome Based Education and Assessment, Multimedia Integrated Group Investigation Model: A Boon for Heterogeneous Science Classroom, Effectiveness of Social Skills Intervention on Developing Social Skills among Juvenile Delinquents, A Critical Analysis of Problem Posing in the Mathematics Curriculum at Secondary Level, Developing ASK in Organic Farming among Prospective Teachers.

We expect that all the articles presented in this issue will provide a medium for dissemination of educational research findings and exchange of experiences among research workers, scholars, teacher-educators, teachers and others interested in educational research and related fields and professions.

**Editor**

## **Invitation for Articles / Research Papers**

Authors are invited to contribute articles on contemporary issues in education in general and Indian education in particular for publication in Santhom Journal of Edu. RACE.

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Chief Editor  
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# Obesity and Associated Psychological Variables of Adolescents at Plus Two Level

Priyanka C. P.  
H. Sam Sanantharaj

## **Abstract**

*The prevalence of obesity has increased worldwide in all segments of the population due to increased industrialization, urbanization, mechanization and associated changes in diet habit of consuming more high energy fast foods. Childhood obesity has association with increased risk of coronary heart disease, stroke and cancer in later life. Therefore, its control and prevention is one of the major concerns for all developing nations. As obesity is related to physical appearances and physical activity, the investigator feels a special need to study social adjustments and self image of obese adolescent plus two students. The main objective of the study was to find out whether there exist any significant relational ship between self- image and social adjustment of obese adolescents at plus two level. For the study normative survey method was adopted. The study concluded that there existed high correlation between Self-image and Social adjustment of obese adolescents. It was also found that there existed low correlation between Self-image and Social adjustment of non-obese adolescents.*

**Key words :** Adolescent, Self-image, Obesity, Psychological variables etc.

## **Introduction**

Education in the present scenario gives importance to the development of the individual as a whole by the co-operative and collaborative process of learning. Today's educational system is intended for the all-round development of the personality of an individual. Personality development depends greatly upon the experiences of the individual, especially of an adolescent; since the experiences of an individual as an adolescent have long standing effect in later life. The present investigation focuses on obese adolescents at plus two levels.

Obesity describes an abnormally high fat accumulation that impairs health. It is crudely measured by a body mass index (BMI) of greater than 30 kg/sq meters. Obesity now ranks among the highest of concerns by the World Health Organization (WHO) and not only in countries of affluence; the figures of obesity worldwide have doubled since 1980 and the problem can now commonly be found in low-and middle-income countries, especially in urban centres. The present study examines the relationship between two-psychological variables, self-image and social adjustment of obese adolescents at plus two levels.

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### **Need and Significance of the Investigation**

The prevalence of obesity has increased worldwide in all segments of the population due to increased industrialization, urbanization, mechanization and associated changes in diet habit of consuming more high energy fast foods and shifting to sedentary lifestyle has affected our children and also increased the risk of chronic diseases among adolescents. Childhood obesity has association with increased risk of coronary heart disease, stroke and cancer in later life. Therefore, its control and prevention is one of the major concerns for all developing nation (Jain, pant, Chopra & Tiwari, 2010). Obesity is considered to be a global epidemic has spread its major roots in our children and adolescents. Overweight children have double chances to become obese adult than normal children. Adolescence is characterized by an exceptionally rapid rate of growth and is often variable in individuals due to its dependence genetic hormonal and nutritional factors. More than 60 percent overweight children have at least one additional risk factor for cardiovascular disease such as raised blood pressure ,high lipidemia or hyper insulinemia and more than 20 percent obese children have two or more risk factors (Jain, Pant, Chopra& Tiwari 2010) .

During the past 20 years, prevalence of obesity among children and adolescents has doubled in America. The United States National Centre for Health Statistics suggests that nearly 15 percent adolescents are overweight or obese. Obesity is harder to treat in adults than in children and prolonged T.V viewings have probably given rise to this Catastrophe. Every day our adolescents are becoming over conscious about their body

images and are often misguided to inculcate unhealthy habits. It is often felt that health of an adolescent is often neglected due to the lack of awareness, busy work schedule and poor compliance from teens.

As obesity is related to physical appearances and physical activity, the investigator feels a special need to study social adjustments and self image of obese adolescent plus two students.

### **Statement of the Problem**

The problem of the present investigation may be stated as Obesity and Associated Psychological Variables of Adolescents at Plus Two Level.

### **Definition of Key terms**

#### **Obesity**

According to commonly used definition, obesity is said to be present when more than 20% of body weight is due to fat in men more than 25% in women. Normal values of fact are 12-18% for men and 18-24% for women (Ganong, 1999).

#### **Adolescence**

Adolescence is a period in which a child matures an adult. The world health organization defines adolescence as the period of life between 10 and 19 years of age (Reema, 2008).

Psychological variables in the study are self-image and social adjustments.

#### **Self Image**

Self image of an individual describes how he/she perceives his/her characteristics and abilities, and how an individual evaluates himself/herself. Self image is an accepted view of how one appears to the world, which includes one's body image to a large extent (George, 2006).

### **Social Adjustment**

Social adjustments are the changes of in habitual conduct of behavior which an individual must make in order to fit in to the community in which he or she lives (Kuppuswamy, 1964).

### **Objectives of the Study**

The objectives of the study were:

1. To find out whether there exit any significant relational ship between self-image and social adjustment of obese adolescents at plus two level.
2. To find out whether there exit any significant relationship between self image and social adjustment of non obese adolescents at plus two level.
3. To find out whether there exit any significant difference between obese and non obese adolescents at plus two levels in self- image.
4. To find out whether there exit any significant difference between obese and non obese adolescents at plus two level in social adjustments.
5. To find out whether there exit any significant difference between obese adolescent boys and girls at plus two level in self image.
6. To find out whether there exit any significant difference between obese adolescent boys and girls at plus two level in social adjustments.
7. To find out whether there exit any significant difference between obese adolescents of government aided and un aided higher secondary schools in plus two level in self image.

8. To find out whether there exit any difference between obese adolescents of government aided and un aided higher secondary schools at plus two level in social adjustments.

### **Hypotheses**

The following hypotheses were formulated for the study

1. There is significant relationship between self image and social adjustments of obese adolescents at plus two levels.
2. There is significant relationship between self image and social adjustments of non obese adolescent at plus two levels.
3. There is significant difference between obese and non obese adolescents at plus two levels in self-image.
4. There is significant difference between obese and non-obese adolescents at plus two levels in Social adjustment.
5. There is no significant difference between obese adolescent girls and boys at plus two levels in self-image.
6. There is no significant difference between obese adolescent girls and boys at plus two level in social adjustment.
7. There is no significant difference between obese adolescents in government, aided and un aided higher secondary schools at plus two level in self image.
8. There is no significant difference between obese adolescents in government aided and unaided higher secondary schools at plus two level in social adjustment.

### **Methodology in Brief**

Normative survey method was adopted in the present study. The details regarding the population, sample, variables, tools,

procedure for data collection and statistical techniques are given below,

### Population and Sample

The population for the investigation consist of all the obese and non abuse students studying in 12<sup>th</sup> standard of the state of Kerala. The sample consisted of 30 adolescent students studying in 12<sup>th</sup> standard in the higher secondary schools in Alappuzha District. For comparative purpose another sample of 30 non obese adolescent students of 12<sup>th</sup> standard was also selected.

### Variables

The variables of the present study includes social adjustment and self-image.

### Tools

The following standardized tools were used for the study.

Social adjustment scale prepared by Philip and George (2009)

Self-image scale prepared by Abraham and Sananda Raj (2010)

### Procedure for Data Collection

The selected schools were visited by the investigator. The investigator personally administered social adjustment scale and self-image scale to the obese and non obese adolescent students. The data collected were analyzed statistically using t-test, Karl Pearson Product Moment correlation and ANOVA.

### Findings

The followings were the major findings of the study

1. The  $r$  obtained (0.90) by correlating the variables, self-image and social adjustment of obese adolescents at plus

two level was greater than the table value, and was significant at 0.01 level.

2. The  $r$  obtained (0.53) by correlating the variables, self-image and social adjustment of non-obese adolescents at plus two level was greater than the table value, and was significant at 0.01 level.
3. The  $t$  obtained (0.92) by comparing obese and non-obese adolescents at plus two level for the variable self-image was less than the table value, which is not significant statistically.
4. The  $t$  obtained (1.14) by comparing obese and non-obese adolescents at plus two level for the variable social adjustment was less than the table value (2.76), which is not significant statistically.
5. The  $t$  obtained (0.13) by comparing male and female obese adolescents at plus two level for the variable self-image was less than the table value(2.76), which was not significant statistically
6. The  $t$  obtained (0.99) by comparing male and female obese adolescents at plus two level for the variable social adjustment was less than the table value(2.76), which was not significant statistically
7. The  $F$  ratio obtained (3.94) by comparing obese adolescents at plus two level in Government, Aided and Unaided Higher Secondary Schools for the variable self image was greater than the table value (3.34) which was significant at 0.05 level.
8. The  $F$  ratio obtained (7.62) by comparing obese adolescents at plus two level in Government, Aided and Unaided Higher Secondary Schools for the variable social adjustment was greater than the table value which was significant at 0.01 level.

## Conclusions

The following were the conclusions of the present investigation

1. There existed high correlation between Self-image and Social adjustment of obese adolescents.
2. There existed low correlation between Self-image and Social adjustment of non-obese adolescents.
3. There existed no significant difference between obese and non-obese adolescents at plus two level in Self-image
4. There existed no significant difference between obese and non-obese adolescents at plus two level in social adjustment
5. There existed no significant difference between obese adolescent girls and boys at plus two level in Self-image.
6. There existed no significant difference between obese adolescents girls and boys at plus two level in social adjustment.
7. There existed no significant difference among obese adolescents at plus two levels in Government, Aided and Unaided Higher Secondary Schools in Self-image.
8. There existed significant difference among obese adolescents at plus two levels in Government, Aided and Unaided Higher Secondary Schools in Social adjustment.

## Implications of the Study

The present study has highlighted certain points that have great implications in

various fields related to education. Some of them are discussed below

### 1. Implications for Students.

The present study establishes the relationship between Self-image and social adjustment of obese adolescents at plus two level. Body-image is a part of Self-image. Body-image refers to a person's internal picture of his/her external physical appearance. Since obesity is associated with Body-image, obese adolescents may develop a negative Self-image. An adolescent with a positive Self-image owns his assets and potentials while being realistic about his liabilities and limitations.

A negative Self-image focuses on one's faults and weaknesses, distorting failure and imperfections. Negative Self-images can produce dysfunctional thought and habits. As this study establishes the relationship between self-image and social adjustment of obese adolescents, those adolescents who are obese can develop a positive self-image by taking necessary steps for the development of positive self-image. They can also adopt a healthy way of living to reduce obesity, which is considered as a global epidemic.

This study helps those adolescents who are obese, to understand the adverse effect of obesity on their Self-image and social adjustment. Those students who are obese can include some of the following activities as a part of their daily life.

- a. Practice of yoga
- b. Visit to health clubs

- c. Jogging
- d. Swimming
- e. Cycling
- f. Regular practice of any one of the sports items
- g. Regular practice of any of the martial arts.

In addition, to this, the food habits of obese adolescents should also be changed. They should also try to reduce their calorie intake through the food. Early prevention of obesity is the better way to healthy life.

## 2. Implications for Teachers

The present study establishes the relationship between self-image and social adjustment of obese adolescents at plus two level. On the basis of the present study teachers can identify those adolescent students who are obese and can provide individual attention to help them to develop a positive self-image. Teachers should always keep a good rapport with the parents of obese adolescent students and give them suggestions if any required to overcome social adjustment difficulties and to reduce the body weight of their children. Teachers can encourage their obese students,

- a. To Practice yoga
- b. To participate in sports and martial arts.
- c. To participate in programmes like Scouts, N.C.C

- d. To visit health clubs and,
- e. To avoid junk foods.

Teachers can make their students aware of the serious health disorders that can be caused by obesity through conducting programmes like thought for the week, health club meetings, school level and class level seminars on obesity.

## 3. Implications for Parents

Since the present study establishes the relationship between self-image and social adjustment, the parents of the obese adolescents should take utmost care to reduce the body weight of their children. Parents should take care to prevent their children from eating junk foods, canned food etc... Care should be taken to discourage prolonged TV watching. Parents can encourage their children.

- a. To develop healthy food habits
- b. To practice yoga
- c. To do regular exercise
- d. To engage in activities of physical strain like gardening, terrace farming and house cleaning.
- e. To regularly visit health clubs.
- f. To participate in extracurricular activities like dance, sports and martial arts.

Since adolescent obesity and childhood obesity are door steps to future coronary disorders and metabolic disorders, parents should be taken utmost care for the early detection and prevention of obesity of their child.

#### 4. Implications for Government.

Considering the relationship between self-image and social adjustment, Governments can make necessary curricular reforms by giving due importance and consideration to Physical education as a curricular subject. Secondary and Higher Secondary level curriculum should include more hours for physical education. Practice of Yoga can be included as a part of curriculum. Governments can provide,

- a. Health clubs and gymnasium in all Govt. Higher Secondary Schools.
- b. The service of a dietician in all Govt Secondary and Higher Secondary Schools.
- c. Infrastructural facility to practice Yoga and Meditation.

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# Relationship between Linguistic Intelligence and Achievement in Mathematics of Students at Secondary Level in Kerala

Sreeraj K. G.  
T. V. Thulasidharan

## Abstract

*The present study is intended to find out the relationship between Achievement in Mathematics and Linguistic intelligence of students at secondary school level. For this 200 students were selected through stratified random sampling procedure giving due representation to the variables such as type of Management of the Schools, School Locale and Sex of the students. A Linguistic intelligence Scale was prepared and standardised and a test in Achievement in Mathematics was also prepared. The data were analysed using the test of significance of means and coefficient of correlation. The result showed that the relation between Achievement in Mathematics and Linguistic intelligence is significant. The Linguistic intelligence of female was significantly different from that of male. The Linguistic intelligence of urban students was significantly different from that of the rural students. Linguistic intelligence is not significantly different for Govt. and Private school students.*

**Key words :** *Linguistic intelligence, Neurological research, Gifted children, Cognitive functions, Multiple intelligence, Conflict resolution etc.*

## Introduction

Howard Gardner tried to make a place for arts in the field of Psychology. In 1967 Howard Gardner became a member of a basic research group 'Project Zero' at Howard Graduate School of Education. The members of the project on Human Potential were expected to work out on the nature of human potential and its peculiarities. There Gardner

engaged in the neurological research at first. Gardner made so many inventions with Norman Geschwind about the conditions of normal and gifted children who have misfortune of different brain damages. They found that patients who are alexia but not a graphic, lose their ability to read numbers, name objects and normal writing. Gardner worked there and comprehended the structure of human abilities in human brain.

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In the book 'The Shattered Mind', Gardner described about how different parts of the brain are dominant for different cognitive functions. He wrote an outline for a book with title 'Kinds of Minds' and he described about different human faculties. This book was published later by the name 'Frames of Mind'. This was based on the discoveries in the biological and behavioral sciences. This was the first research program that led to the theory of Multiple Intelligences.

"Persons who have Linguistic intelligence like to explain everything using words. They may be talkative and can get on well with others so they can easily take part in social activities. This may use in cooperative learning for class activities, arrange peer coaching during the production of an artwork.

Interpersonal intelligence means person-to-person way of interaction. If this person-to-person way of knowing is more developed in us, we learn through personal interactions. We probably have lots of friends, show a great deal of empathy for other people and exhibit a deep understanding of other's points of view. We are also probably skilled in conflict resolution, mediation, and finding compromise when people are in radical opposition to each other.

In our educational system, Mathematics is the basic of all sciences. Mathematics is the science of quantity and space. It is the best model of real things. The mathematical calculations develop future predictions about our nature. Mathematics develops a step by step study of the figures and objects through logical reasoning and abstract concepts (Kneebone, 1963)

Mathematics teachers usually face much struggle to get their students to explain about the solution of a problem. All students may not say the method of solving a mathematical problem. For solving each problem there is a procedure. Actually there occurs a transformation of language to numbers as thinking is closely related to language. Some students feel Mathematics difficult. Some of them feel Mathematics boring and to some extent useless. The investigator found some students with much verbal interaction or linguistic ability showed some eagerness to learn Mathematics. So a study based on the relationship between Linguistic intelligence and Achievement in Mathematics was felt as necessary.

#### **Objectives of the Study**

1. To find out the Linguistic intelligence of secondary school students in Kerala.
2. To find out whether there is any significant relationship between the Achievement in Mathematics and Linguistic intelligence of secondary school students in Kerala.
3. To find out whether there is any significant relationship between the Achievement in Mathematics and Linguistic intelligence for subsamples based on gender.
4. To find out whether there is any significant relationship between the Achievement in Mathematics and Linguistic intelligence for subsamples based on locality.
5. To find out whether there is any significant relationship between the Achievement in Mathematics and Linguistic intelligence for subsamples based on management of schools.

### Hypotheses

1. There is significant relationship between the Achievement in Mathematics and Linguistic intelligence of secondary school students in Kerala.
2. There is significant correlation between the Achievement in Mathematics and Linguistic intelligence of secondary school students based on gender
3. There is significant correlation between the Achievement in Mathematics and Linguistic intelligence of secondary school students based on locality of schools.
4. There is significant correlation between the Achievement in Mathematics and Linguistic intelligence of secondary school students based on management of schools.

### Methodology

In the present study survey method was used. The sample consisted of 200 students from 7 schools studying in standard IX of Kollam district. For selecting the sample due representation was given to different strata like gender, management and locality of schools.

**Table 1**

#### ***Descriptive statistics of scores for Linguistic Intelligence***

Variable	N	Mean	Std. Deviation	Skewness	Kurtosis
Linguistic intelligence	200	71.61	24.80	-0.83	0.21

The mean Linguistic intelligence is 71.61 with standard deviation 24.80. The skewness of Linguistic intelligence is -0.83 which is slightly negatively skewed and the

### Tools Used for the Study

1. The test of Linguistic intelligence
2. The Achievement test in Mathematics

### The Standardisation of the Test of Linguistic Intelligence

For the standardisation, a draft tool consisting of 75 items was prepared through discussion with experts in the field of education. These 75 items were presented to a sample of 370 students of different strata. After item analysis 25 items were selected for the final test. Validity was ensured through opinion of experts and reliability was determined by using split-half method. The reliability was 0.81.

### Statistical Techniques Used

1. Karl Pearson's correlation coefficients is used to study the relationship between Linguistic Intelligence and the Achievement in Mathematics.
2. Fisher's Z-transformation test.

### Analysis and Interpretation

The descriptive statistics mean, standard deviation, skewness and kurtosis for the Linguistic intelligence scores were calculated and it is presented in table 1

kurtosis is 0.21, which is a little leptokurtic. Thus with respect to the Linguistic intelligence, the distribution of students is slightly negatively skewed

### Correlation Analysis

The correlation between the Achievement in Mathematics and the Linguistic

Intelligence for the total sample was calculated using Karl Pearson's correlation coefficient. The values obtained are presented in table 2.

**Table 2**

#### ***Karl Pearson's correlation coefficient between Linguistic Intelligence and Achievement in Mathematics***

Variables	Sample Size (N)	Degrees of Freedom	Coefficient of Correlation
Linguistic intelligence	200	198	0.553 **
Achievement in Mathematics	200		

Select \*\* Significant at 0.01 level of significance

The correlation coefficient of Mathematics Achievement and Linguistic Intelligence is .553. This shows that the relation is moderate.

The table value shows that Linguistic intelligence is positively correlated to the Achievement in Mathematics and is significant at 0.01 level of significance ( sig. <0.01). It indicates that the relation between the Linguistic intelligence and Achievement in Mathematics is significant.

#### **Comparison of the relationship between the Linguistic Intelligence and Achievement in Mathematics with Respect to Gender**

To check the difference in the amount of relationship (correlation coefficients) of

Achievement in Mathematics and Linguistic intelligence between male and female students, Karl Pearson's correlation coefficients for both sets were computed separately. The correlation coefficient of Achievement and Linguistic intelligence of males is 0.458 and that of females is 0.359. Both the correlation coefficients are significant at 0.01 level of significance.

Then to compare the amount of relationship between male and female, the equality of the respective correlation coefficients were tested by Fisher's Z transformation test for equality of correlation coefficients. Its results are given in table 3

**Table 3**

#### ***Fisher's Z-transformation test for the equality of correlation coefficients of Achievement in Mathematics and the Linguistic Intelligence between male and female students.***

Variables	Coefficients of Correlation for		Fisher's Z-transformation test for the equality of correlation coefficients	
	Male $r_1$	Female $r_2$	Z-value	Sig. P values
Linguistic Intelligence	0.458	0.359	-2.25	0.0244
Achievement in Mathematics				

The Z-transformation test shows that correlation coefficients between Achievement in Mathematics and Linguistic intelligence of male and female students is significantly different at 0.01 level.

**Comparison of the relationship between the Linguistic intelligence and Achievement in Mathematics of Rural and Urban School Students**

To check the difference in the amount of relationship (correlation coefficients) of

Achievement in Mathematics and Linguistic intelligence between rural and urban school students, Karl Pearson's correlation coefficients for both sets were computed separately. (The correlation coefficient of Achievement in Mathematics and Linguistic Intelligence are 0.432 and 0.359 respectively for rural and urban school students. Both the correlation coefficients are significant at 0.01 level). Then tested their significance of difference using Fisher's Z-transformation test. Results are presented in table 4.

**Table 4**

***Fisher's Z-transformation test for the equality of correlation coefficients of Achievement in Mathematics and the Linguistic Intelligence between rural and urban students.***

Variables	Coefficients of Correlation for		Fisher's Z-transformation test for the equality of correlation coefficients	
	Rural $r_1$	Urban $r_2$	Z-value	Sig. P values
Linguistic intelligence	0.432	0.359	0.86	0.0386
Achievement in Mathematics				

The Z-transformation test shows that there is significant difference in correlation coefficients between Achievement in Mathematics and Linguistic intelligence of rural and urban school students. The difference is significant at 0.01 level.

**Comparison of the relationship between the Linguistic intelligence and Achievement in Mathematics for Government and Private School Students.**

To check the difference in the amount of relationship (correlation coefficients) of

Achievement in Mathematics and Linguistic intelligence between Government and Private school students, Karl Pearson's correlation coefficients are computed for both sets. (The correlation coefficient of Achievement in Mathematics and Linguistic Intelligence is 0.477 for Government school students and 0.346 for Private school students. Both the correlation coefficients are significant at 0.01 level). Then tested their significance using Fisher's Z transformation test. Results are presented in table 5.

**Table 5**

**Fisher’s Z-transformation test for the equality of correlation coefficients of Achievement in Mathematics and the Linguistic intelligence between Government and Private school students.**

Variables	Coefficients of Correlation for		Fisher’s Z-transformation test for the equality of correlation coefficients	
	Government $r_1$	Private $r_2$	Z-value	Sig. P values
Linguistic Intelligence	0.477	0.530	1.08	0.285
Achievement in Mathematics				

The Z-transformation test shows that there is no significant difference in correlation coefficients between Achievement in Mathematics and Interpersonal Intelligence of Government and Private school students. This means that the amount of relationship between Achievement in Mathematics and Linguistic intelligence is not significantly different in the case of Government and Private school students.

**Conclusions**

1. The mean Linguistic intelligence is 71.61 with standard deviation 24.8. The skewness of Linguistic intelligence is -0.83. The t- test shows that correlation coefficients between achievement in mathematics and Linguistic intelligence of male and female students is significantly different at 0.01 level of significance.
2. The correlation coefficients of Achievement in Mathematics and Linguistic intelligence are 0.458 for male and 0.359 for female students. Both the correlation coefficients are significant at 1% level of significance. The t- test shows that there is significant

difference in correlation coefficients between Achievement in Mathematics and Linguistic intelligence of rural and urban school students.

3. The z-transformation test shows that there is significant difference in correlation coefficients between Achievement in Mathematics and Linguistic intelligence of rural and urban school students. This is significantly different at .01 level of significance
4. The correlation coefficient of Achievement in Mathematics and Linguistic intelligence are 0.477 for Govt. school students and 0.346 for private school students. Both the correlation coefficients are significant at 1% level of significance.
5. The correlation analysis shows that Linguistic intelligence is positively correlated to the Achievement in Mathematics and is significant at 1% level of significance (sig. <0.01). It indicates the relation between the Linguistic intelligence and Achievement in Mathematics is significant

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# Developing Truth and Love among Higher Secondary School Students

T. C. Thankachan

## **Abstract**

*The presence of values such as; truth, love, non-violence, co-operation, spirituality and tolerance, are necessary for the peaceful living and survival of mankind. Peace education is that education which is “directed to the full development of human personality and to the strengthening of respect for human rights and fundamental freedoms”. Peace Values are the values which are foundations of live together in harmony for peaceful resolution of conflicts. Some of the core peace values are; Love, Co-operation, Truth, Non-violence, Spirituality and Tolerance. The two major values such as Truth and Love are taken into consideration for this study. The major objective of the study is to find out the effectiveness of Value Discussion Model in developing Truth and Love among the adolescent students. The experimental study, using pre-test post-test Non-Equivalent group Design, was conducted on a sample of 80 higher secondary school students. From this study the investigator found that the Value Discussion Model is effective for developing Truth and Love and constitutes the basis and background for peaceful life in our school, family and society. .*

**Key words:** *Love, Truth, Peace Values, Value Discussion Model, Value Analysis, Adolescence, etc.*

## **Introduction**

Education is a process of preservation and transmission of values to help the learner lead a meaningful life. A person's commitment, values, processing abilities, preferences, concern and devotion count a lot in making him or her as an efficient human being. The fabric of human society is woven with value based social interactions. The practice of education based on values and value system help people survive in today's corporate social life. Education for peace according to UNICEF refers to the

process of promoting knowledge, skills, attitudes and values needed to bring about in the behavioral changes that will enable children, youth and adults to prevent conflict and violence to resolve conflict peacefully and create conditions conducive for peace, whether at the interpersonal, intrapersonal, national or international level. To inculcate the peace values and peace skills, all human faculties such as knowing feeling and doing should play a role. Thus education for peace covers entire domains of learning, cognitive, affective and psychomotor domains. The peace

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values can be shaped, nurtured and developed at home, and educational institutions.

In fact peace to be lasting and constructive, it must be achieved through education. Hence it is the right time to find innovative strategies for peace education. Terror is one of the most disturbing problems of today all over the world. We are living in the world of global terrorism and warfare. Never before in the history of mankind, had war been so hideous terrible and devastating as it has been today. War is not limited to battle field or national boundaries rather it has taken the form of guerrilla war where the agents of enemies create devastation amidst the civilian population of the countries.

Today's society expects schools to ensure that students not only become informed citizens capable of understanding and analyzing issues but acquire skills to solve problems efficiently in life. It enables an individual to meet the challenges posed by a rapidly changing world. Reports on education have emphasized the need for people to return to education in order to deal with new situations arising in their personal life and workplace. The word "Peace" is multi dimensional. For example- It has many shades and meanings i.e.,- absence of war, non-violence, Tolerance, Compassion, Happiness, Justice, Equality, Secularism, Democracy, Basic human rights... so on.... and so forth. Peace exists where people are interacting non-violently and are managing their conflict in a positive way keeping in mind the concerns and interests of others with love and affection.

### **Peace and Values**

Education for peace calls for a significant reduction not an increase, in

curriculum load. Value education is subsumed in education for peace, but it is not identical with it. Education for peace calls for a liberation of learning from its classroom refinement and its transformation into a celebration of awareness enlivened with the delight of discovery. A comprehensive system of education and training is needed for all groups of people at all levels and forms of education, formal and non-formal. The development of a holistic approach, based on participatory methods and taking into account the various dimensions of education for a culture of peace (peace and non-violence, human rights, democracy, tolerance, international and intercultural understanding, cultural and linguistic diversity) is its main objective.

There is an urgent need to create a culture of non-violence, spirituality and tolerance in all walks of life, which may help in creating peaceful affectionate and sane society. A disparate need therefore is being felt by educationalists, philosophers, scientists and political leaders to rejuvenate the human values, which may bring long – lasting peace on this planet. It is possible only through education. Peace Values are the values which are foundations of live together in harmony for peaceful resolution of conflicts. Some core peace values are given below; Love, Co-operation, Truth, Non-violence, Spirituality and Tolerance. The two major values such as Spirituality and Tolerance are taken into consideration for this study.

### **Truth**

Pursuit of truth is the aim of life according to Indian philosophy. It is an intrinsic value reflected in Idealism. Intrinsic values are values, which are good in them. Important intrinsic values are truth, goodness



and beauty. Truth is God. One who seeks absolute truth seeks God. *Jesus Christ* once said, "I am the way, the truth and the life". *Gandhiji* used truth and satyagraha as powerful weapons to win the freedom of the country. Without truth, it is impossible to observe any principles or rules in life. Man has to be true in speech, thought and action. *Gandhiji's* autobiography, '*My Experiments with Truth*' illustrates the power of truth through a systematic analysis of his life.

### **Love**

Love is an invaluable gift of nature to all beings on the earth. Love can be seen everywhere- between God and man, mother and child, husband and wife, brothers and sisters, teachers and students and so on. Without love, friendship has no meaning; without love service has no meaning; without it relationship has no meaning; and after all, without the love between teacher and the taught education has no meaning. So man has to keep the quality of love that is the quality of mind, in all walks of his life. To day, the human relationships based on pure love and affection is disappearing. Here education only can develop among the students the quality of love and affection and it is the sign of expansion of heart.

### **Need and Significance of the Study**

To preserve and promote values, mainly; truth and love, education necessarily should involve the development and transmission of values. Values refer to object that human beings consider desirable and working of pursuits in their thought, feelings and actions. These may be material, or abstract qualities and states of mind and heart like, truthfulness, love, happiness, peace

and justice. The problem of values is a more general one, common to all fields of human activity, but often, education is looked upon as the instrument for inculcating values. Our present system of education lacks value education, which is need of the hour. Today's generation is exposed to fatal evil "values crisis". The factors contributing to value crisis are modernization and materialism.

The National Curriculum Frame work (2005) upholds the importance of value education by identifying the aim of education as per the constitutional vision of India founded on the values of social justice and equality. It includes independence of thought and action, sensitivity to other's well-being and feelings, learning to respond to new situations in flexible and creative manner, pre disposition towards participation in democratic processes, and the ability to work towards and contribute to economic process and social change. It can be made possible through the inculcation of values and value education in the school curriculum. It also recommended transforming knowledge into experience and generating important personal and social values such as self-reliance, creativity and co operation.

Learning to live together is one of the major issues in the context of peace education. It needs love, truth and good relationships. Growing violence in schools is a cause of concern and major threat in developing the culture of peace. There is an urgent need to create a culture of non-violence and tolerance in all walks of life, which may help in creating peaceful affectionate and sane society. A disparate need therefore is being felt by educationalists, philosophers, scientists and political leaders to rejuvenate the human

values, which may bring long – lasting peace on this planet. It is possible only through education. So we need a system of education for tolerance and spirituality.

The present paper is entitled as “Effectiveness of Value Discussion Model on Truth and Love among Higher Secondary School Students”.

### Objectives of the Study

1. To identify the peace values of students studying in standard eleven of Higher Secondary Schools in Kottayam district.
2. To compare the means of the pre-test scores of Truth and Love among the pupils of standard eleven of experimental and control group.
3. To compare the means of the post test scores of Truth and Love among the pupils of standard eleven of experimental and control group.

### Hypotheses of the Study

- 1) There is a significant difference between Truth and Love among students of standard eleven of Kottayam district.
- 2) There is no significant difference between the means of scores of pre-test on Truth and Love among the pupils of standard eleven of experimental and control group.
- 3) There is no significant difference between the means of scores of post-test on Truth and Love among the pupils of standard eleven of experimental and control group.

### Methodology in Brief

The investigator adopted true experimental method in the study and used pre-test post-test Non-Equivalent group Design. The methodology of the present study was described under the following heads; sample, tools used and statistical techniques employed. The table below shows the design selected for the experimental study.

**Table 1**

#### *The diagrammatic representation of the research design*

Pre-test Post-test Non-equivalent Group Design			
Group	Pre-test	Treatment	Post-test
Experimental Group (N=40)	Administration of Peace Value Scale	Teaching through Value Discussion Model. Ten lesson transcripts each with 45 minutes duration is prepared and administered	Administration of Peace Value Scale
Control Group (N=40)	Administration of Peace Value Scale	Teaching through Activity method. Ten lesson transcripts each with 45 minutes duration is prepared and administered	Administration of Peace Value Scale

In the present study there are variables – Independent variable and Dependent variable. Instructional material based on Value Discussion

Model is independent variable and Peace Values, such as Truth and Love are the dependent variables.

### Sample of the Study

The sample selected for the study was eighty students of Higher Secondary Schools, in which forty belongs to experimental group and forty belongs to control group with equal consideration of boys and girls, and almost equal number of students from different religions. The investigator used random sampling as sampling method.

### Tools Used for the Study

- i) Peace Value Identification Inventory prepared by the investigator to identify the core peace values.
- ii) Peace Values Scale prepared by the investigator to identify the peace values such as Truth and Love of Higher Secondary School Students. The areas selected as the situations selected from Home, School, Society, and Media.

- iii) Lesson Plans and worksheets based on Value Discussion Model.

### Statistical Procedure Used

For the present study, the investigator used both descriptive as well as inferential statistics, such as, Mean, Standard deviation, Percentage, t test, etc.

### Analysis and Interpretation of the Data

#### 1. Identification of Truth and Love among Pupils of Standard Eleven

The investigator formulated the first objective titled as 'to identify the Peace Values of pupils studying in standard eleven of experimental and control group in terms of Truth and Love'. Thus the investigator collected the data pertaining to the objective by administering the tool 'Peace Value Scale' on 80 pupils of standard eleven of Kottayam district. The data is presented in table 2.

**Table 2**

***Pre-test and post-test scores on peace values among students of standard eleven of experimental and control group***

Values	No. of pupils	Minimum	Maximum	Mean	
				Pre-test	Post-test
Truth	80	10	60	39.71	38.36
Love	80	10	60	39.45	37.38

The identified peace values such as, Truth and Love obtained pretest mean score 39.71, and 39.45 respectively. In the post-test, the values Truth and Love obtained the mean 38.36, and 37.38 respectively.

## 2. Comparison of Means of Pre-test scores on Truth and Love among the Pupils of Standard Eleven of Experimental Group and Control Group

The investigator formulated the second objective to find out where there exists any significant difference in the means of the pre-test scores on Truth and Love among the pupils of standard eleven of experimental and

control group. For this the investigator formulated null hypothesis and is stated below;

Ho: There exists no significant difference between the means of pre-test scores on Truth and Love among the pupils of standard eleven of experimental group and control group. The data and results of test of significance are given in table 3.

**Table 3**

***Test of significance of the difference between the means of the pre-test scores on Truth and Love among pupils of Experimental and Control Group.***

Sub variable	Group	No	Mean	SD	't' value	Significance
Truth	Control	40	40.80	6.11	1.699	<i>Not significant at 0.05 level</i>
	Experimental	40	38.63	5.31		
Love	Control	40	40.75	6.99	1.932	<i>Not significant at 0.05 level</i>
	Experimental	40	38.15	4.86		

From table 3, it is clear that the experimental and control group means of the pre-test scores on the value Truth and Love is 40.80 and 40.75 respectively and 38.63 and 38.15 respectively. From this, it is observed that, in the analysis of pre-test scores of students of standard eleven of experimental and control group, the obtained 't' value with respect to Truth (1.699) and Love (1.932) is not significant at 0.05 level of significance.

Therefore the null hypothesis stated there is no significant difference between the means of pre-test scores on peace values such as, Truth and Love among the pupils of standard eleven of experimental group and control group is accepted.

## 3. Comparison of Means of Post-test scores on Truth and Love among the Pupils of Standard Eleven of Experimental Group and Control Group

The third objective was to find out where there exists any significant difference in the means of the post-test scores on Truth and Love among the pupils of standard eleven of experimental and control group. For this the investigator formulated a null hypothesis, which is stated below;

Ho: There exists no significant difference between the means of post-test scores on Truth and Love among the pupils of standard eleven of experimental and control group. The data and results of test of significance are given to table 4.

**Table 4**

**Test of significance of the difference between the means of the post-test scores on Truth and Love among pupils of Experimental and Control Group.**

Sub variable	Group	No	Mean	SD	't' value	Significance
Truth	Control	40	38.53	7.25	2.232	<i>Significant at 0.01 level</i>
	Experimental	40	42.20	5.11		
Love	Control	40	36.55	7.21	2.505	<i>Significant at 0.05 level</i>
	Experimental	40	39.20	6.75		

From table 4, the investigator observed that the means of the post-test scores on Truth and Love in the experimental group is 42.20 and 39.20 respectively. The means of post-test scores on values Truth and Love in the control group is 38.53 and 36.55 respectively. From this, it is evident that in the analysis of post-test scores on peace values among the pupils of standard eleven of experimental and control group, the obtained 't' value with respect to Truth (2.232) and Love (2.505) is significant at 0.05 and 0.01 level of significance. Therefore the null hypothesis stated there is no significant difference between the means of post-test scores on Truth and Love among the pupils of standard eleven of experimental group and control group is rejected and the research hypothesis is accepted.

### **Discussion of the Results**

From the study, the investigator found that the Value Discussion Model is effective for developing Truth and Love among the students of standard eleven of Higher Secondary Schools of Kottayam District. Studies in the review of related literature agreed with the findings of current study. The

first objective of the study was to identify the Peace Values of pupils studying in standard eleven of higher secondary schools of Kottayam district in terms of Truth and Love.

The second objective of the study was to compare the means of pre-test scores on Truth and Love among the pupils of standard eleven of experimental and control group. The investigator carried out the analysis and interpretation of the this objective using two tailed 't' test of significance difference between two means. The result of the analysis was that there exists no significant difference between the means of pre-test scores on peace values among the pupils of experimental and control group with regard to the values Truth and Love. The obtained 't' value with respect to Truth (1.699) and Love (1.932) is not significant at 0.05 level of significance.

The third objective of the study was to compare the means of the post-test scores of Peace Values among the pupils of standard eleven of experimental and control group. The investigator carried out the analysis and interpretation using two tailed 't' test of

significance difference between two means. The result of the analysis was that there exists a significant difference between the means of post-test scores on peace values among the pupils of experimental and control group with regard to the values Truth and Love. The obtained 't' value with respect to Truth (2.232) and Love (2.505) is significant at 0.05 and 0.01 level of significance.

### Major Finding of the Study

- ◆ The Value Discussion Model is effective for developing Truth and Love among the pupils of standard eleven of Higher Secondary Schools of Kottayam District.

### Implications of the Study

Based on the findings of the present study, the investigator made the following suggestions and educational implications.

- ◆ The study reveals that Value Discussion Model is more effective than existing method for developing Peace Values such as Truth and Love. Due to the need and importance of Peace Values, it provides an opportunity to implement the Value Discussion Model for teaching values in the classroom situations.
- ◆ Training strategy should be developed for training the teacher trainees at colleges of Teacher Education to orient the student teachers in the Value Discussion Model for developing values.
- ◆ We should start with giving practice to students for developing Truth and Love and peace skills in using teaching strategies for developing values.

### Conclusion

The purpose of the present investigation was to find the Effectiveness of value Discussion Model on developing Truth and Love among the pupils of Standard Eleven of Kottayam District. The investigator would feel great in the finding of this study, would lead to better understanding of teaching. Learning process helps students to learn in an interesting way. It also supports curriculum makers to design new curriculum and to plan their topics and motivate researchers to undertake further studies for developing peace values. Education in values is founded on humanistic philosophy of education which aims at the overall development of the human being as an individual and as a member of the society.

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# Female Students' Preference for Online Counselling of Human Immunodeficiency Virus in Federal College of Education, Kano

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## Abstract

*This study assessed female students' preference for online counselling of Human Immunodeficiency Virus (HIV) in Federal College of Education, Kano. Descriptive survey design was employed in which views of 360 participants were sampled from a population of 6,761 female students through a 20-item scale (developed by the researcher) called Female Students Preference Scale (FSPS) whose reliability of 0.69 was estimated via Cronbach's Alpha. Two research questions and corresponding hypotheses were postulated for the study and descriptive statistics (frequency and percentage) were used to answer the research questions. Whereas One-sample Kolmogorov Smirnov (K-S) Z-score was applied to analyze null hypothesis one, 2X4 chi-square was employed in testing the second hypothesis at 0.05 level of significance. Results obtained from the analysis revealed that 68.6% of female students in FCE Kano were favourably disposed to online counselling of HIV. Preference ratio of B.Ed. to NCE was approximately 1:1 (64.5% and 65.8% respectively). Similarly, Z-score value of -34.65 (at  $P < 0.05$ ) shows that female students' preference for online counselling of HIV is significant. The study also found a significant difference between B.Ed. and NCE female students' preference for online counselling ( $\chi^2$ -value = 68.756;  $P < 0.05$ ). A major recommendation offered suggests introduction of online counselling services for female students on health and sexuality education.*

**Key words:** Female students' Preference, Online counselling, Stereotype etc.

## Introduction

Since the start of the global Human Immunodeficiency Virus (HIV) epidemic, in many parts of the world, females have remained at a much higher risk of HIV infection than males. Young females in particular, account for a disproportionate number of new HIV infections among young people living with HIV. In 2013, there were

an estimated 380,000 new HIV infections among young females aged 15 to 24 every year, accounting for 60% of all new HIV infections among young people (World Health Organization, 2014). Eighty percent of all young females living with HIV live in sub-Saharan Africa (UNAID, 2014). Moreover, HIV remains the leading cause of death among females of reproductive age, yet access to HIV testing and treatment remains low.

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A major gap in HIV service provision for females can be found in HIV counselling and testing (HCT), with HCT a vital entry point to treatment services. Only 15% of females aged 15 to 24 in sub-Saharan Africa were aware of their HIV status in 2013 (World Health Organization, 2014). By comparison, access to HIV counselling and testing for pregnant women is rising but remains too low. In 2013, 44% of pregnant women living with HIV in low and middle-income countries (Nigeria inclusive) received HCT, up from 26% in 2009 (World Health Organization, 2014).

Several factors have been found to hinder women access to HCT services. For instance, parents who mandatorily want their children to always seek for permission before accessing HIV counselling and testing services may deter young females from patronizing intervention programmes due to fear of disclosure or violence (Center for Global Development, 2009). The proportion of females who have experienced physical or sexual violence and then seek help, ranges from just 18% in Azerbaijan to 52% in Colombia (UNAIDS, 2014). In Nigeria, this practice is not unusual. Societal stereotype about the role of females in relation to sexuality make them feel relegated and stigmatized (HIVAN, 2005). This form of practice made many female students in Colleges of Education in Kano state to resist HIV counselling and testing (Haruna, 2017a). Resistance to HIV/AIDS is a personal, automatic and unconscious ways of reaction in which clients refuse to interact with HIV/AIDS therapist (counsellors) by way of boycott and total aloofness (Haruna, 2017b). Counselling resistance may be caused by factors such as stigma (Haruna, 2011), peer

influence (Haruna, Tambawal & Salawu, 2014), stereotyping (Haruna, 2015), risk factors (Haruna, 2016). While the aforementioned factors have been proven to distort the purpose of HIV counselling under actual traditional therapeutic settings, and in consideration of the plight of many youth around the globe who have little or no access to actual/normal traditional face to face counselling, the online counselling has been used to reach out to such youngsters.

Online counseling is the provision of professional mental health counseling services through the Internet. Services are typically offered via email, real-time chat, and video conferencing (Mallen, Michael, David, & Vogel, 2005). Some clients use online counselling in conjunction with traditional counselling, and a growing number of clients are using online counselling as a replacement for office visits (Glueckauf, Fritz, Ecklund-Johnson, Liss, Dages & Carney, 2002). While some form of tele-psychology has been available for over 35 years (Spiro & Devenis, 1991), the advent of internet video chat systems and the increasing penetration of broadband has resulted in a growing movement towards online therapy. Clients are using video conferencing, live chat and email with professional psychologists in place of or in addition to face-to-face meetings (Spiro & Devenis, 1991).

The growing body of research into online counselling has established the efficacy of online therapy with treatment outcomes at least equal to traditional in-office settings (Change & Yeh, Krumboltz, 2001). Online therapy has additional benefits unrealized by office-based treatments as it allows the patient to attend sessions at a higher rate than

traditional sessions (Stofle, 2001). The number of missed appointments is much less than with in-person therapy (Suler, 2000). Some researchers (Cassidy & Johnson, 2001) suggest that online counselling is more effective because a client is at greater ease and feels less intimidated than they would in traditional settings (Zelvin, 2004).

Research on the relationship between female preference and counselling outcomes provides strong supports for the online assessment and empirical investigation of this factor. Meta analytic finding indicate that females who preferred and receive online counselling, as compared with females who receive a non-preferred counselling, show significantly greater counselling outcomes and satisfaction, and significantly lower resistance rates at a ratio of almost one-to-two. (Lindhrem et al, 2014 & Swift et al, 2011).

Cohen and Kerr (1998) conducted a study on the effectiveness of online therapy for treatment of anxiety disorders in students and found that there was no difference between distance and regular students in the level of change for the two modes as measured by the State-Trait Anxiety Inventory (Mallen, Michael, David & Vogel, 2005). As the main goal of counselling is to alleviate distress, anxiety or concerns experienced by a client when he or she enters therapy, online counselling has strong efficacy under that definition (Kessler & Kaur, 2009). Client satisfaction surveys tend to demonstrate a high level of client satisfaction with online counselling, while the providers sometimes demonstrate lower satisfaction with distance methods (Mallen, Michael, David & Vogel, 2005). Researchers have suggested that

counselling professionals themselves are more critical of newer technologies than their clients (Kessler & Kaur, 2009). There is a split within the counselling field on the validity of online counselling. Some practitioners have suggested that online counselling cannot be considered psychotherapy (Zelvin, 2004), while other published studies conclude that online cognitive behavioral therapy is as effective as traditional "in-person" therapy for the treatment of anxiety (Cohen & Kerr, 1998).

A study by Haruna and Hassan (2017) assessed students' preferences for online counselling of test anxiety in Federal College of Education, Kano. Views of 370 students were sampled from a population of 10,349 through a 20-item scale called Preference for Online Counselling of Test Anxiety Scale (POCTAS). Results of the study revealed that both Bachelors of Education (B.Ed.=78.2%) and Nigeria Certificate in Education (NCE=74.8%) as well as male and female (71.0% and 78.5%) students respectively preferred online counselling for test anxiety. While B.Ed. and NCE students differ significantly ( $t = -3.605$ ;  $P < 0.016$ ) in their preferences, male and female students do not differ ( $t = -1.601$ ;  $P < 0.05$ ). The study concludes that online counselling could serve as a viable approach for counselling students with test anxiety.

Although local literature on the efficacy of online counselling are scarce, the rate at which female students in Federal College of Education, Kano access and utilize online educational facilities such as online libraries and scholarships may make them appreciate online counselling for HIV.

Nevertheless, while review of empirical studies shows viability of online counselling, none has addressed female students' preference for online counselling of HIV in Federal College of Education, Kano. Therefore the present study attempt to bridge the gap. To achieve this, two research questions and corresponding hypotheses were postulated as thus:

#### Research Questions:

1. Does female students in Federal College of Education, Kano prefer online counselling of HIV?
2. Is there significant difference between B.Ed. and NCE female students in their preference for online counselling of HIV in Federal College of Education, Kano?

#### Null Hypotheses

1. Female students' preference for online counselling of HIV in Federal College of Education, Kano is not significant.
2. There is no significant difference between B.Ed. and NCE female students respectively in their preferences for online counselling of HIV in Federal College of Education, Kano.

#### Research Methodology

The design employed in this study was descriptive survey in which views of representative members (sample) of the population were obtained and used to examine the phenomenon under study (Haruna, 2012). In this context, all regular female (B.Ed. and NCE) students in Federal College of Education, Kano whose population was 6,761 were covered by the study.

**Table 1**

#### Population of the study (N=6,761)

Level	B.Ed.	NCE	Total
100	315	1,932	<b>2,247</b>
200	657	1,383	<b>2,040</b>
300	691	852	<b>1,543</b>
400	929	Nil	<b>929</b>
<b>Total</b>	<b>2,594</b>	<b>4,167</b>	<b>6,761</b>

Source: Students Records Office, 2015/2016

Guided by Research Advisors (2006) procedure for selecting sample size, 360 participants were sampled. Consent of Participants was sought through their Heads of Departments/Units. Female students' knowledge of the internet was however not a consideration for participation. To arrive at a representative sample, proportions (sample) of each programme (B.Ed. and NCE) across levels were determined and presented in table 2.

**Table 2: Sample size (N=360)**

Level	B.Ed.	NCE	Total
100	17	103	<b>120</b>
200	35	74	<b>109</b>
300	37	45	<b>82</b>
400	49	0	<b>49</b>
<b>Total</b>	<b>138</b>	<b>222</b>	<b>360</b>

Source: Students Records Office, 2015/2016

Given the distribution in table 2, random sampling was used to select participants from each stratum. To ensure

that data is adequately obtained from participants, seven Research Assistants were employed and trained on the rudiments of the exercise, such as administration and scoring of data collection instrument.

The instrument used for data collection was a scale (developed by the researcher) known as Female Students Preference Scale (FSPS). Content validity of FSPS was demonstrated by examining the consistency of the inventory with research and theoretical literature as well as assessment by experts. Using Cronbach's Alpha procedure, a reliability of 0.69 was obtained for the scale. Research Assistants have been trained on usage of the instrument, administered it on participants. A total of 360 FSPS copies were given to Research Assistants to enable them carry out the exercise. Extra copies of the scale were also provided for replacement of damaged instruments where necessary. In a nutshell, a four-week period was set for data collection.

Data obtained via the completed scales were analyzed using Statistical Package for Social Sciences (SPSS version

18.0 software). Frequency and percentage of participants' responses to items on the scale were used to determine their preference for online counselling of HIV. One-sample Kolmogorov-Smirnov (K-S) Z-score was used to test the significance of female students preference for online counselling of HIV (null hypothesis 1) while 2X4 chi-square statistic was applied to find out the difference between B.Ed. and NCE female students' preference for online counselling of HIV in Federal College of Education, Kano..

### Data Analysis and Results

Descriptive statistics (frequency and percentage) were employed to compute participants' responses to items on the scale and results of the statistics were used to answer the research questions.

#### Research Question 1

Do female students in Federal College of Education, Kano prefer online counselling of HIV?

To answer this research question, frequencies and percentages of students' responses to FSPS were determined and result is presented in table 3.

**Table 3**

#### Frequencies and percentages of female students' preference for online counselling

Views	L100	L200	L300	L400	Total	%
Preferred	74	87	53	31	247	68.6
Not Preferred	46	22	29	18	113	31.4
<b>Total</b>	<b>120</b>	<b>109</b>	<b>82</b>	<b>49</b>	<b>360</b>	<b>100</b>

Figures in table 3 above reveal frequencies and percentages of views of female students on preference for online counselling of HIV in FCE, Kano. A total of 247 (68.6%) of respondents preferred online counselling of HIV, while 31.4% are not favourably disposed to it.

### Research Question 2:

Is there any difference between Bachelors of Education (B.Ed.) and Nigeria Certificate in Education (NCE) female students' preference for online counselling of HIV in Federal College of Education, Kano?

To answer this question, frequencies and percentages of participants' views were determined. Result of the statistics is presented in table 4.

**Table 4**

### Frequency of B.Ed. & NCE students' preferences for online counselling (N=360)

Level	B.Ed. (n=138)		NCE (n=222)		Total
	Preferred	Not Preferred	Preferred	Not Preferred	
100	11	06	63	40	120
200	25	10	52	22	109
300	22	15	31	14	82
400	31	18	Nil	Nil	49
<b>Total</b>	<b>89(64.5%)</b>	<b>49(35.5%)</b>	<b>146(65.8%)</b>	<b>76(34.2%)</b>	<b>360</b>

The distribution in table 4 is the frequency of B.Ed. and NCE female students' preference for online counselling of HIV in Federal College of Education, Kano. It illustrates that 64.5% and 65.8% of B.Ed. and NCE female students respectively prefer online counselling HIV, while 35.5% and 34.2% respectively are do not prefer online counselling. This shows a relatively similar(1:1) viewpoints between the two groups of female students in FCE, Kano.

### Null Hypothesis 1

Female students' views on preference for online counselling of HIV in Federal College of Education, Kano is not significant.

To determine the significance of female students' views on preference for online counselling of HIV, one-sample Kolmogorov Smirnov (K-S) Z-score procedure was applied and P-value obtained from the analysis was compared with 0.05 threshold (significance level). Result of the analysis is presented in table 5.

**Table 5: Z-score analysis of significance of female students' preference for online counselling**

Parameters	Values
Population Size	6,671
Population Mean	965.6
Population Variance	245187.9
Sample Size	360
Sample Mean	61.2
Z-Score	-34.65
P-value	0.000
Decision	Reject $H_0$ 1

The above statistics in table 5 show calculated Z-Score for the significance of

female students' views on preference for online counselling of HIV in FCE, Kano. The Z-score of -34.65 is significant at P-value of 0.000 less than the threshold (0.05). Therefore, null hypothesis 1 is hereby rejected.

#### Null Hypothesis 2

There is no significant difference between B.Ed. and NCE female students in their preference for online counselling of HIV in Federal College of Education, Kano.

To test this hypothesis, frequencies of B.Ed. and NCE female students' views on preference for online counselling of HIV were subjected to 2X4 chi-square analysis and P-value obtained was compared with the 0.05 probability threshold. Result of the statistic is presented in table 6.

**Table 6: Chi-square analysis of difference between B.Ed. and NCE female students' preference for online counselling of HIV (n=360)**

Programme	N	Df	Chi-Square	P-Value	Decision
B.Ed.	138	358			
NCE	222		68.756	0.00001	Reject $H_0$ 2

The chi-square statistics on table 6 above reveal significant difference between B.Ed. and NCE female students' preference for online counselling of HIV. Figures in the table show that the chi-value of 68.756 is significant (P-value: 0.00001) at 0.05 probability threshold. Therefore, the postulated null hypothesis 3 is hereby rejected.

#### Discussion of Findings

Analysis of data obtained from female students in FCE, Kano in respect to their

views on preference for online counselling of HIV has revealed significant results. Finding on the first hypothesis indicates that calculated Z-Score analysis of female student' views on preference for online counselling of HIV (-34.6) is significant at P-value of 0.000 less than the threshold (0.05). It shows that 68.6% of the participants assessed were favourably disposed to the service. This finding is in conformity with the result of the study by Haruna and Hassan (2017) who assessed students' preferences for online counselling

of test anxiety in Federal College of Education, Kano. In their study, views of participants obtained via a sample of 370 students extracted from a population of 10,349 revealed that majority (78.5%) of female students preferred online counselling for test anxiety. The study concludes that online counselling could serve as a viable approach for counselling students with test anxiety. Although their research centered on counselling of test anxiety, both studies focused on online counselling.

Meta analytic finding indicate that females who preferred and receive online counselling, as compared with female who receive a non-preferred counselling, show significantly greater counselling outcomes and satisfaction, and significantly lower resistance rates at a ratio of almost one-to-two (Lindhrem et al, 2014 & Swift et al, 2011). Change and Yeh (2001) established that efficacy of online therapy with treatment outcomes at least equal to traditional in-office settings. Stoffle (2001) opined that online therapy has additional benefits unrealized by office-based treatments as it allows the patient to attend sessions at a higher rate than traditional sessions. The number of missed appointments is much less than with in-person therapy (Suler, 2000). Some researchers (Cassidy & Johnson, 2001) suggest that online counselling is more effective because a client is at greater ease and feels less intimidated than they would in traditional settings (Zelvin, 2004).

The analysis of data obtained from participants' responses on second null hypothesis found that B.Ed. and NCE female students differ significantly in their preferences for online counselling of HIV. This result

corroborates the finding by Cohen and Kerr (1998) in their study on the effectiveness of online therapy for treatment of anxiety disorders in students and found that there was no difference between distance education and full time students in the level of change for the two modes as measured by the State-Trait Anxiety Inventory. Haruna and Hassan (2017) in their study on assessment of students' preference for online counselling of test anxiety in FCE Kano also provide support for the present finding. They established that While B.Ed. and NCE students differ significantly ( $t = -3.605$ ;  $P < 0.05$ ) in their preferences, male and female students do not differ ( $t = -1.601$ ;  $P > 0.05$ ).

### Conclusion

Human Immunodeficiency Virus (HIV) no doubt has devastating effect on human race. Apart from the fact that the virus destroys body defense mechanism, it also leaves behind some psychological impacts on the individual which potentially distort the purpose of testing and counselling services - a globally accepted major entry point for management of the epidemic. While the traditional counselling approaches are effective for many female students who physically seek for help from counsellors, others who are shy or stigmatized may find it difficult to access the services, hence the need for online counselling. Online counselling as an alternative intervention medium has the potential of reducing stigma and increase access to HIV information and other intervention programme.

As a global phenomenon that started like a hobby by a few computer literate people, online platforms are being used by

many organizations to render assistance to clients. Apart from being a medium of social connectivity, it is also used for educational advancement and psychological support. Therefore, female students in Federal College of Education, Kano could find this as a useful platform for access to intervention programme.

### Recommendations

1. College Counselling Center should be equipped with internet facilities, online counselling experts and introduce free online services for female students in FCE Kano.
2. College counselling center should as a matter of fact create special blogs dedicated to discussing women reproductive health issues and sexuality education concepts.

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# Effectiveness of Activity Oriented Pedagogy Implemented in Kerala

K. R. Gopinadhan

## **Abstract**

*The country has initiated a wide range of programmes for achieving the goal of UEE. These efforts were intensified in the 1980s and 1990s through several schematic and programme interventions. These interventions put in place a decentralised system of teacher support through District Primary Education Project (DPEP) and SSA. General Education provide the foundation where technical education, research and development help to construct the super structure. In an era of information technology where world is aspiring for computer literacy, extending the elementary education among all children has become pertinent, with cent percent literacy. All the centrally sponsored programme beginning from Operation Black Board (OBB) Sheme targeted quality elementary education in the state. The new teaching learning processes at the elementary level in the state is based on student centered and participatory approach. The role of teachers, teachers organizations, School Management Committees (SMC) or PTA are creditable. The prime objective was to acquire information on basic aspects related to changes in language transaction, changes in reading habit, changes in responsibility, changes in self improvement, changes in the ability to understand, changes in hand writing, changes in the ability to write without mistake, changes in creativity, changes in reading habit, changes in problem solving and changes in co-scholastic areas. The study revealed that majority of the teachers welcomed the new text books, hand books and workbooks as that are found as catalistic agents for better classroom transation that caused for positive changes in the learning processes. No teacher remarked against the proposed learning strategies and never showed discontent for preparation and presentation.*

**Key words :** *Elementary education, Computer literacy, Centrally sponsored programme, Block resource centres etc.*

## **Introduction**

National Plicy of Education 1986 earmarked for a dynamic change in the field of Elementary Education. The country has initiated a wide range of programmes for achieving the goal of UEE. These efforts were intensified in the 1980s and 1990s through several schematic and programme interventions such as Operation Black Board

Scheme (OBB) Shiksha Karmi Project (SKP) Mahila Samakhya, Andra Pradesh Primary Education Project (APPEP), Bihar Education Project, Lok Jumbish project and teacher Education. These interventions put in place a decentralised system of teacher support through District Primary Education Project (DPEP) and SSA. The constitution Act 2002(Eighty sixth Amendment) inserted Article

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21-A in India constitution and Education become a fundamental Right.

Right of Children to free and compulsory Act (RTE) 2009 envisaged right to full time elementary education of satisfactory and equitable quality in a formal school. Human resource development is the major factor that determine the prosperity and goodness in any field of human activities. General Education provide the foundation where technical education, research and development help to construct the super structure. In an era of information technology where world is aspiring for computer literacy, extending the elementary education among all children has become pertinent, with cent percent literacy. The state of Kerala is poised for achieving more ambitious target by focusing on quality . All the centrally sponsored programme beginning from operation Black Board (OBB) SHEME targeted quality elementary education in the state.

### **The Background**

District Primary Education Programme (DPEP) implemented during 1996 marked the beginning of student centred participatory teaching learning programme in the state. Prior to implementation of DPEP the state education department adopted the Operation Black Board scheme with a view of improving infrastructure facilities of primary schools. DPEP was introduced in six backward districts by changed strategies in teacher training, classroom atmosphere, pedagogy, learning materials and public participation. Finding the success in learner centred, activity based leaning system all over the state with the entry of Sarva Shiksha Abhiyan (SSA) project into the elementary education wide spread and massive efforts were taken

to enrich the human resource of teachers by giving training through a network of Block Resource Centres (BRC) in the state. After identifying the trainers through a selection process, they were given orientation and training on the Activity Based Learner Centred teaching learning programmes. The trainers trained at different levels were monitored in the form of On Site Support (OSS). Social monitoring at Panchayath, Block, District and finally at state level were regular. Thus the participatory programme is being supported from different angles and the entire system was strengthened. The elementary school curriculum was revised three times within a period of 15 years. New Text Books (Course Book), Hand Book (Source Book), Work Book were made to accomplish the objectives of Activity Based Teaching. The new system of education has undergone several experimental processes to reach at the present level. The revision processes in the Text Books and Hand Books are still under operations at the feedback of curriculum changes.

### **The New Teaching Learning Process**

The new teaching learning processes at the elementary level in the state is based on student centered and participatory approach. The role of teachers, teachers organizations, School Management Committees (SMC) or PTA are creditable. A major achievement of the New System is the changes in the school environment and classroom atmosphere. Every primary school is decorated with child friendly and nature friendly fantasy characters of children. In order to enable the teachers to transact curriculum objectives effectively human resource development has become imperative. Well planned, well designed and properly examined

training programmes are being designed and imparted through different sources - DIETs, BRCs, CRCs. etc.

### **The File Study**

Since learner achievement at a desired level plays a crucial role in determining the activity based class system it was decided to focus on the various aspects of classroom transactions and the relationship between the learner and the teacher. Also the role of parents, heads of the institutions and all major stakeholders were closely followed through different tools and techniques. As a prelude to determine field study, a pilot survey was conducted in the first week of March 2012 in Thiruvananthapuram. Twenty five teachers, 40 students, 20 parents and four head of schools participated in the study.

The prime objective was to acquire information on basic aspects related to changes in language transaction, changes in reading habit, changes in responsibility, changes in self improvement, changes in the ability to understand, changes in hand writing, changes in the ability to write without mistake, changes in creativity, changes in reading habit, changes in problem solving and changes in co-scholastic areas. The thrust areas were identified by preparing check list for pupils, teachers, parents and head of school along with observation schedule for classroom transaction.

### **Need for the Study**

The pilot study conducted for identifying the present status of the learners in the elementary school aspired for knowing the status of activity based classroom strategy and its outcome on other parts of the state considering the geographical, cultural and

social conditions in the different regions of the state. The experiences revealed through the pilot study needed to be tested and identified in the state as such. The attitude of teachers towards the new pedagogy, the involvement of community in the learners achievement process and the outcome of learning are found differently at different schools. As an attempt for a policy suggestion to the educational stakeholders, the subject has been chosen for study. With this end in view a detailed study focusing on teachers, students, parents and head of schools was conducted in 3 districts, viz., Thiruvananthapuram, Thrissur and Palakkad.

### **Statement of the Problem**

Child centred learning is not a new theme in the field of primary education. Beginning from Rousseau and his theory "back to nature" all educational thinkers proposed the need for learning by doing. Ever since the curriculum framed for elementary level no effort had been bestowed in par with life centered situations. The constant changes in the learning materials prepared and practiced at school level went on several criticism as learners are used for educational experiments. The present curriculum and learning materials are in fact derived after several trial and error experience. Hence a clear picture of the existing educational quality at the elementary level is detrimental.

Development is determined by the availability of resource in any nature of society. In a state like Kerala the most available resource is the human resources which developed by equipping physical capital of the society. The role of education in the process of human resource development is acknowledged at all levels.

A teacher in the modern classroom is a pivotal character and teachers requires higher potentials for updating his resources. The significance of training deversities modernises with the techniques of HR theories. The state of Kerala implemented the new learning practices in its 14 districts since 1989. Several experimental programme were undertaken including the proposals from the MHRD through its centrally sponsored programmes. The investigator from his personal experience and from the pilot study found some gap in the achievement of learners competence and hence an attempt to locate the gaps was made. The study was titled as **Effectiveness of Activity Oriented Pedagogy Implemented in Kerala**

#### **Operational Definitions of the Terms**

##### **Activity Oriented Pedagogy**

With the inception of several centrally sponsored scheme in the find of eduction operational strategies of learning environment have been changed from the conventional teacher centred school system. Natural environment have been changed from the converntional teacher centred school system. National Policy on Education (NPE) and its Programme of action (POA) initiated several learning structure from top to the bottom of educational environment. District institute of Educational and TRaining (DIETs) a district resource unit for primary education was established in all the districts of the county with unique features intended for local specific needs with the establishment of District primary Education Programme (DPEP) block level institutions were established as an exteneded arm of DIET in the name of Block Resource Centre (BRC). Under each BRC,

there established Cluster Resouce Centres (CRC) for micro analysis of learning inputs and local specific plans for teaching learning process. Community participation become an unquestioned part of learning and thus emerged the Mother Parents Teacher Association (MPTA) Parent Teacher Association (PTA) and finally the school Management Committee (SMC). Monitoring devices at different level were established as State Monitoring Committee, District Monitoring Committee, Block Monitoring Committee, Panchayath Monitoring Committee and School Resourch Groups.

#### **Objectives of the Study**

The study was intended to identify the following major objectives

- ◆ To findout the effectiveness of Activity Based Classrooms (ABC).
- ◆ To find out the admissibility of ABC method in the Kerala context
- ◆ To compare strength and weaknesses of the learning strategies
- ◆ To asses the nature and attitude of different stakeholders.

#### **Specifie Objectives are :**

- ◆ To find out the impact of teachers training
- ◆ To find out impact of OSS
- ◆ To find out the impact of CRC level meeting
- ◆ To ascertain the adequacy of learning materials
- ◆ To assess the changes in reading habit, responsibility, co-curricular area, problem solving, self study, reading habit, creativity, nature of interaction (language proficiency), ability to write without mistake, hand writing and reading habit.

### Method Used for the Study

This study was to assess the impact of classroom method and its outcome in the form of learner achievement. Hence normative survey method was chosen for data collection. Observation schedules, check list and face to face interaction were adopted to find problems and prospects. Primary information collected through the designed tools and analysis of important documents collected through the designed tools and important data collected through secondary source were analysed. Statistical techniques like percentage, Z-test of significance and chi-square were also used for interpretation. Descriptive analysis were made through mean, median, mode and standard deviation.

The researcher used multistage cluster sampling procedure. Trivandrum, Thrissur and Palakkad districts out of the 14 districts in the state were selected. Teachers, students, head of the schools and parents from the identified schools were selected through random sampling technique.

### Findings

- ◆ Activity oriented class room techniques are not new to the teachers who follow pedagogic aspects. Majority of the teachers willfully discarded the activities due to the efforts in the management and implementation of activities, that are to be formed, reframed and administered contextually.
- ◆ It is identified that the teachers who have adopted the AB techniques, immensely impressed the learners and that were focussed in their learning outcome.
- ◆ Majority of the teachers welcomed the new text books, hand books and

workbooks as that are found as catalytic agents for better classroom transition that caused for positive changes in the learning processes. No teacher remarked against the proposed learning strategies and never showed discontent for preparation and presentation.

- ◆ There was a little bit of alarm among parents in the beginning as the changes could not be sufficiently interpreted to them by the implementing agencies. But they co-operated with the changes and began to be co-learners of their wards.
- ◆ But the changes were remained alien to the parents of rural areas as the preparation and back grounds for implementations moved slowly and unscientifically to them.
- ◆ Series of training programmes, debates, seminars and meetings with parents remarkably delighted the learners, teacher educators, teachers and parents.

### Conclusion

The researcher has chosen three districts out of the 14 districts in the state Trivandrum, Thrissur and Palakkad. Trivandrum is the capital districts, Thrissur the cultural centre of the state and Palakkad known for tribal population and Tamil speaking minority population. By choosing these three districts, the researcher could focus only a cross section of the entire schools and its wide variety of teachers, learners and parental population. All the schools are following similar curricular learning materials evaluation tools and classroom facilities. All teachers in the state are getting similar type of training through BRC and CRCs. The difference is focussed on individual exposure and trainers

competence. To get in touch with all section of the school community remains impracticable and hence limited to the adopted samples.

Now the state syllabus from class I to XII is in tune with activity oriented pedagogy. With the emergence of IT enabled facilities class rooms began to be converted into smart class rooms. School premises are converted to better leaning environment and learning out come remained progressive all through the years.

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# Encountering Cross-cultural Curricular Content: Platform for Developing New Pedagogical Perspectives for Teaching Diverse Students

*Genevieve N. Aglazor*

## **Abstract**

*The current classroom compositions of students reflects recent demographic changes due to migration across the globe. This reality has led to calls for change in curricular content and in teacher education programmes in particular. Some literature on teacher education suggest that these changes must include cross-cultural content and culturally sensitive teaching approaches. In essence, current teacher education programmes must highlight the complexity in the relationships between classroom teachers and their diverse students. Consequently, the greatest challenge faced by teacher education programmes across the globe is preparing the teaching workforce to teach all students found in their classrooms regardless of their learning styles, cultural, linguistic and socio-economic background. This paper therefore investigates how broad-based teacher education programme teach prospective teachers competencies that strengthen their pedagogical perspectives to teach students from a global worldview while recognizing the benefits of the rich backgrounds provided by their diverse classrooms.*

**Key words:** *Diversity, pedagogy, pedagogical perspectives etc.*

## **Introduction**

There has been an increase in student diversity in classrooms around the world as a result of recent demographic changes due to migrations. This reality has led to calls for change in education in general and in teacher education programmes in particular in particular to meet the needs of all students. Some suggest that these changes must include broader, richer curricular content as well as an all-inclusive teacher education programmes so that well-

trained teachers not only develop cultural sensitivity but also internationalize and/or globalize education as a whole. In essence, what scholars of teacher education are highlighting is the complexity in the relationship between teachers and their diverse students whose value systems most of the teachers do not understand. Consequently, the greatest challenge faced by teacher education programmes today is preparing the teaching workforce to teach all students regardless of their learning styles, cultural,

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linguistic and socio-economic background. (Cochran-Smith, 2008).

In order to function effectively and as contributing citizens to this new global society, we are all expected to acquire global competencies needed in an increasingly interconnected world. I will use Bennett's (2002) definition of multicultural competence and Allert, Atkinson, Groll, & Hirtleman's (2007) definition of global competencies to guide my study. Bennett (2002) argues that multicultural competence includes "the ability to interpret intentional communications (languages, signs, gestures), unconscious cues (such as body language), and customs in cultural styles different from one's home culture" (191). Cultural competence comprises four components: (a) Awareness of one's own cultural worldview, (b) Attitude towards cultural differences, (c) Knowledge of different cultural practices and worldviews, and (d) cross-cultural skills. Developing cultural competence results in an ability to understand, communicate with, and effectively interact with people across cultures (Martin & Vaughn, 2007). Guided by similar principles, global competency is the acquisition of broad-based knowledge, skills and disposition to function independently, effectively and collaboratively with peoples from other parts of the world on issues of global significance such as race, socio-economic class, gender, and equity. Allert et al. (2007) articulated this point at the end of an interdisciplinary study in which they explored innovative programmes to build "global competency" in undergraduate engineers (p. 1). They argued that interdisciplinary collaborations between departments of foreign language and schools of engineering can be highly productive for engineers who now compete in an international market for engineering know-how.

They concluded that no longer is cultural sensitivity needed only for product design destined for diverse markets. Increasingly, successful entry into the engineering profession requires significant intercultural skills in order to join efficient and productive collaborations with diverse engineering colleagues (Allert et al., 2007).

The argument above underscores the interdisciplinary nature of internationalizing teacher education programmes. From a teacher education standpoint, my research will investigate how exposing aspiring teachers in a teacher education programme in the South-South region of Nigeria to intercultural curricular content can create dissonance to help develop thinking that transcends their primary cultural, ethnic and linguistic heritage to include seeing the world through other cultural perspectives (Lucas, 2006). Dissonance refers to the psychological phenomenon in which discomfort is produced by the combined presence of two thoughts that do not follow in a sequential order from one another (Festinger, 1954). I am arguing that the desire to reduce the dissonance created by the conflict or anxiety resulting from the inconsistency between aspiring teachers' beliefs and the reality of their encounters with cross cultural learning materials/experience will help them engage in deeper learning through active processing and understanding of diverse content (Wiersema & Licklider, 2007). I am particularly interested in how a different cultural content leads aspiring teachers to develop skills needed for teaching from a broader worldview.

### **Rationale for the Study**

Our world has become inescapably cross, inter and multicultural; and therefore,

challenges our social systems to meet the needs of this changed world. Scholars indicate that teacher educators need to provide aspiring teachers opportunities for reflective learning and to self-address the cultural, linguistic, racial and ethnic differences that may exist between them and the students found in classrooms today (Gay, 1994). The multiple dichotomies between teachers and their students has consequences for students' academic achievement (Cochran-Smith, 2008a; Ogbu, 1987).

Additionally, the global job market requires applicants who bring not only intelligence but cross-cultural cooperation and global competency skills, and can work with people from different national and cultural backgrounds (Nussbaum, 1997). If our teachers do not possess these skills themselves, they cannot be expected to impart them to their students. So, there is need for "innovative programmes to enable ...students to acquire global competency as part of their undergraduate curricular" (Allert et al., 2007, p. 1). Many scholars argue that unless we expose preservice teachers to multicultural experiences such as those provided by study abroad programs (Chieffo & Griffiths, 2009; Cushner, 2009; Lewin, 2009; Nolan, 2009; Picard, Bernardino, & Ehigiator, 2009), teachers will remain ill prepared to teach cross culturally and will not acquire the needed global perspective. According to Allert et al. (2007):

New programmes must include multicultural/global experiences ... and must offer much more than what has been available as traditional courses; [students] need to complete relevant and substantive programmes if they are to achieve real gains in global competency. (p. 1)

By acquiring global competency, aspiring teachers will develop dignity and equity as better models for education and avoid rejecting other values and perspectives that they do not understand (Guest, 2002). In 1984, Carol Hahn noted that:

Whether we like it or not...each of us riding on this planet is affected by one another's decisions and actions. We share a common destiny and, to an increasing extent, we share a common culture. ...we are participants in a global society. (Lewin, 2009, p. 5)

It is becoming increasingly necessary to recognize that broadening teacher education programmes to include cross cultural content is closely tied to equipping aspiring teachers with global competencies needed classrooms today. The average classroom has become a microcosm of the world.

### **Research Context**

Many studies (Chieffo & Griffiths, 2009; Cushner, 2009; Lewin, 2009; Nolan, 2009; Picard, Bernardino, & Ehigiator, 2009) have looked at the role of cross cultural studies such as study abroad as one of the many approaches used by international tertiary institutions to provide cross cultural learning experiences that broaden the curricular content of their teacher education programmes. Although a large body of research has looked at study abroad as a form of cross cultural learning experience for students from the American perspective, I could not find studies that looked cross cultural curricular expansion specifically in teacher education programmes in Nigeria.

The corpus of cross and intercultural education literature focus on how to develop inclusive instruction to raise academic

performance for students (Banks & Banks, 2004; Bennett, 2002; Cochran-Smith, 2008). The literature also address social justice issues associated with oppression, political power and the inequality in the distribution of economic resources (Apple, 1982), but none has explored a reconceptualization of aspiring teachers' pedagogical perspectives as a direct result of cross cultural learning experience in Nigeria. A review of literature from other disciplines revealed the following noteworthy findings.

1. Psychologists acknowledge that cultural awareness and cultural sensitivity are major components in nursing and counseling, noting that working with people from non-White cultures provides opportunities for self-awareness (Leong & Kim 1991; Pederson, 1988; Sue, Akutsu, & Higashi, 1987). Similarly, others within the field note that knowledge of racial and cultural variables such as racial identity, ethnicity, acculturation, worldviews, and value differences, and their respective influences on cultural groups are important (Sodowsky, Taffe, Gutkin, & Wise, 1994).
2. Business scholars found that understanding cultural differences is an asset when negotiating business on the global stage (Adler, 2002).
3. Critical theorists and Afrocentrists (Banks & Banks, 2004; Cochran-Smith, 2008; Merrifield, Jarchow, & Pickert, 1997) emphasize teaching styles that ensure the academic achievement of students from all socio-economic backgrounds.

The wealth of these studies contribution to the field of education in general and teacher education in particular is the

impetus for my critical look at aspiring teachers' personal experiences in the Nigerian context. My study examined aspiring teachers' reaction to exposure to cultural value-laden learning materials in their second and third year global education course from curriculum theory, critical theory, and multicultural education and global worldview perspectives.

### Research Question

This researcher brings a personal participatory experience to this study which gives it added authenticity. My participation in a study abroad programme (Honduras Study Abroad Programme) in 2010 brought me to the realization that I had been studying abroad since the day I immigrated to the U. S. And this realization became an added impetus for curiosity to investigate how cross cultural learning experiences like study abroad, as a component of a teacher education programme can change aspiring teachers' pedagogical perspectives (Chieffo & Griffiths, 2009; Pajares, 1992). The study will be guided by the following research questions:

Would exposing aspiring teachers to cross cultural curricular content lead to their development of new pedagogical perspectives? Would this resultant new pedagogical perspective broaden their worldview and better equip them with necessary skills to teach students with diverse background?

It is important to note here that bringing my personal study abroad experience to this study injects possible bias into the work. The bias will be mitigated by allowing the study to be strictly guided by the research questions established above.

### **How does this study contribute to existing literature on study abroad?**

Nigeria's cultural and linguistic vastness amplifies the numerous issues of diversity associated with formal classroom learning environments (cultural, ethnic, socio-economic), and the consequent disconnect between the teachers and students. This researcher believes that the study will make a significant and meaningful contribution in the search for solutions to what Raths (2008) describes as the failure of teacher educators to prepare qualified teachers who can teach in diverse classrooms.

My study will not only contribute to the understanding of aspiring teachers' cross cultural learning experiences in a general sense but will provide insight into what those experiences mean to them. As an area of interdisciplinary interest to other scholars or practitioners in higher education as a whole, the findings from my study will inform cross cultural programme design and curricular to maximize the impact of the dissonance that results in new knowledge creation, leading to change in pedagogical perspective.

Current labour market needs dictate that teachers should teach from a broader worldview. It is hoped that this study will strengthen the knowledge base of its teachers education programme at the Federal University where the study was conducted. It will also provide learning experiences that challenge aspiring teachers to become global citizens and foster personal growth. This adds to existing findings that cross cultural studies and interactions in teacher education can act as a catalyst for positive social change (Lewin, 2009).

### **Methodology / Research Design**

The purpose of this study is to examine how exposing aspiring teachers to cross cultural curricular content lead to their development of new pedagogical perspectives which potentially broaden their worldview and equip them with skills to teach students from diverse background.

Participants (aspiring teachers) were observed with particular attention to how they reacted to course topics that focused on unfamiliar cultural issues and how they interpreted their learning experiences. They were also observed for how they made personal meaning(s) of those experiences; and finally whether those experiences led to changing their pedagogical perspectives as aspiring classroom teachers.

#### **Data Collection Method**

#### **Data Sources and Collection**

Multiple data collection methods such as direct classroom observations, questionnaire and semi-structured interviews were used. These data were collected during class as topics were taught, small group discussions and completing individual questionnaire. The open-ended nature of phenomenology facilitated the use of these strategies because they are congruent with its philosophical framework and provided access to participants' experiences (Ajjawi & Higgs, 2007).

#### **Participant Observation**

This was the most used data collection method because it "offered possibilities for the researcher on a continuum from being a complete outsider to being a complete insider" (Creswell 1998, p. 123). Study participants were classmates in the same global education course (EDU 112). By

the middle of the semester, my observation included "photo elicitation" (Creswell 1998, p. 120), a process during which I showed participants photos that I took in my previous observation of them and asked them to discuss the content of the pictures (Denzin & Lincoln, 1990). This process evoked reflective meaning making of the captured image. The multiple observations not only gave me opportunities to witness how participants were dealing with the phenomenon being studied in real time and context but they also allowed me to note any extraneous intervening or influencing factors and to note unspoken reactions.

### **Semi-Structured Interviews**

In qualitative research, interviews not only establish rapport between researcher and participants they also provide a forum for participants to share their experiences from their perspectives using their own voices and words. Interviews allowed for probing and scaffolding for deeper access to participants' narratives and the meaning of their learning experiences (Ajjawi & Higgs, 2007). Random semi-structured interviews were conducted during class. These allowed the researcher to observe non-verbal communication and emotions evoked by a given cultural topic for in-depth inquiry into the essence and meaning of that particular experience. See Appendix A for the semi-structured interview protocol used for this study.

### **Participants**

Purposeful convenient sampling method (Denzin & Lincoln, 2000; Patton, 2002) was used in recruiting participants for this study. The pool from which I drew my participants was made up of aspiring teachers

already on a teacher career path. I introduced the study to the whole class of approximately 300 students explaining to them that they were all potential participants until the end of the course when ten percent of the class was randomly selected for semi-structured interview. The choice of first and second year students for the study was based on the understanding that they were just beginning their teacher education and therefore a convenient group for redirecting their perspectives about other cultures.

The data thus collected were analysed and interpreted.

### **Discussion and Findings**

Garii (2009), a world renowned scholar has always maintained that, lack of knowledge about other cultural or societal expectations outside of one's own cultural understandings can be a major obstacle to making sense of those cultural experiences. Encountering other cultural curricular content challenged and forced my participants to confront previously held personal beliefs and assumptions about other cultures. More importantly, it created dissonance which upon resolution led to the broadening of horizon and changing of paradigms. I must note that for some of the participants, encountering new and different cultural ways, values and learning experiences angered them to the extent of trying to fit those experiences within their own cultural framework.

The participants were regrouped based on similarities in their responses to interview questions and their questionnaire scores in various sub-sections. The individual and group themes identified in this study were largely extrapolated from individual participant data.

**Table 1**  
**Summary of participants' themes**

Participants' Groupings and Emerging Themes	Themes
Group A	<ol style="list-style-type: none"> <li>1. Personal religious beliefs</li> <li>2. Awareness of western cultural practices</li> <li>3. Shift in perspective</li> <li>4. Desire to travel to the west</li> <li>5. Student-teacher relationship</li> </ol>
GROUP B	<ol style="list-style-type: none"> <li>1. Personal religious beliefs</li> <li>2. Distaste for western cultural practices</li> <li>3. Desire to travel to the west</li> <li>4. Student-teacher relationship</li> </ol>
GROUP C	<ol style="list-style-type: none"> <li>1. Personal religious beliefs</li> <li>2. Awareness of western cultural practices</li> <li>3. Desire to travel to the west</li> <li>4. Student-teacher relationship</li> </ol>
GROUP D	<ol style="list-style-type: none"> <li>1. Awareness of western cultural practices</li> <li>2. Desire to travel to the west</li> </ol>
GROUP E	<ol style="list-style-type: none"> <li>1. Personal religious beliefs</li> <li>2. Distaste for western cultural practices</li> </ol>

A cross analysis of the themes from the chart above does not only reveal the spectrum in participant reaction to new cultural content but more importantly shows commonalities in their reactions and the meanings that they made of those encounters. The summary chart above shows core themes based on their frequency of occurrence across participants' individual/group themes and provides a quick snapshot of core themes that emerged from this study.

#### Collective (Core) themes

Overall, four core themes emerged from the cross-analyses among themes; some themes weighing more in the data than others. The four themes are:

1. Personal religious beliefs
2. Distaste for some western cultural practices
3. Shift in perspective
4. Desire to travel to the west
5. Student-teacher relationship

Looking from far and above from our high places of safety in the developed civilization, it is easy to see all the crudity and irrelevance of magic. But without its power and guidance early man could not have mastered his practical difficulties as he has done, not could man have advanced to the higher stages of civilization.

Influenced by their religious beliefs, many participants were incensed the thought that early man believed that it is by the “power of magic” that he mastered and overcame difficulties and not by the “Grace of God.” Nacirema was referred to as “ungodly.” It was confusing and difficult to reconcile the simultaneous distaste for some American cultural practices and the desire of some participants to go and live there.

Less than 20% of participants indicated a shift in perspective. This shift was rather superficial and not a clear understanding of the need to be culturally sensitive. The shift was more of an admitted awareness of the existence and the differences among cultures. The recognition of these differences were more strongly acknowledged in teacher-student relationships as shared from the text: “Do I want to be a teacher?” Participants seemed to be set in their beliefs in power dynamic between teacher and students. They did not subscribe to interacting with students at a “friendly” level for fear of loss of respect from students.

### **Conclusion**

The findings suggest that aspiring teachers bring different expectations, assumptions, beliefs, and knowledge base about other cultures to teacher education programmes which invariably impact their learning experiences.

The Biographical section of the questionnaire revealed that none of the participants had travelled outside Nigeria and none had encountered formal learning about other cultures prior to the study. They all came to teacher education programme and the global education course with limited cross-cultural experience. The variety of reactions that participants expressed in their

data provided an insight into the concrete experiences that they believed as having impacted the way they thought about culture before taking this course. Cultural awareness was overshadowed by reinforced personal religious beliefs which seemed to block objective critical reasoning. Phillion et al (2009) found that cross-cultural awareness involves the process of knowledge formation as participants are challenged to negotiate and interpret their encounters with a new culture. That was not the case here. Participants not able to step back from their own deeply embedded religious and cultural beliefs to ponder other possibilities such as those found in the course content. What was learned here was not whether participants were completely transformed into global citizens but that their participation in this study gave them access to the curriculum as a point of entry into the cosmopolitan space (Appiah, 2008) where participants, distanced from the insulation of their single paradigm, [were] exposed to and challenged by beliefs and practices of other cultures. Exploring my participants’ shared perspectives through their collective themes may not have enriched their cultural awareness, it certainly exposed them to new worldviews and placed them on paths to potentially developing new pedagogical perspective.

### **Educational Implications**

Findings from this study will add to the growing literature on the need for broadening and globalizing teacher education curricular base. First, it will help aspiring teachers rethink the notions of being a minority student who sometimes feels invisible in classrooms (Ritchie & Wilson, 2000) dominated by a particular cultural group. Second, it will reveal to aspiring teachers

their power to reconstruct their pedagogical perspectives to strengthen them as teachers for the 21<sup>st</sup> century. Third, insights from this study can inform teacher education programme design and funding decisions and add to the current empirical support for the positive impacts of cross-culturalism in teacher education.

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# A Theoretical Background of the Education of Differently abled Children – from Segregation to Inclusion

Suresh Kumar K.

## Abstract

*Education is the systematic and deliberate process that equips the child with knowledge, attainment of skills, values and attitudes which enables him to participate effectively in all spheres of life. Education of children with special needs has witnessed several changes, shifting from segregation to inclusion in the main stream. The four major identifiable formulation of disability are; the charity model, the bio-centric model, the functional model and the human rights model. Special education is the education of students with special needs in a way that addresses the students' individual differences and needs. Integrated education is the integration of the children with differential abilities in regular schools. Inclusive education is providing education to differently abled students along with normal students by providing facilities and normal atmosphere as given to normal students. In inclusive education, mainstreaming and integration are viewed as intermediary steps to the ultimate goal of teaching all students together. Educational policies come under inclusive education focusing on the needs of all marginalized groups from all sectors in the society.*

**Key Words :** *Individual differences, Marginalized groups, Tri-polar process, segregation, inclusion etc.*

## Introduction

Education is the systematic and deliberate process that equips the child with knowledge, attainment of skills, values and attitudes which enables him to participate effectively in all spheres of life. There will be no doubt by saying that education is a bi-polar or tri-polar process as designed by many educationalists and ideologists revolve around a central aspect i.e. education for all. The entire process of education is worthless if it is not as per the necessities of the child. Each child is an indispensable part of the society and it is the responsibility of the

society to provide education to the child according to his needs. The class rooms should be designed to the diverse needs of the children. For the question of offering special or general education for the differently abled children, the best answer is inclusion. It can be seen as part of the equality of education and it is recommended in the educational documents of many countries.

Education of children with special needs has witnessed several changes, shifting from segregation to inclusion in the main stream. Though at a larger level in the society, the philosophy of inclusion was

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always promoted in our country, there was no formal or specialized assistance to children with special needs in the schools. The shifting approaches to disability have many changes based on diverse policies and practices. The four major identifiable formulation of disability are; the charity model, the bio-centric model, the functional model and the human rights model. The various models of disabilities depict various functions and demand more rights from the states.

### **The Charity Model**

The charity approach gave birth to a model of custodial care, causing extreme isolation and the marginalization of people with differential abilities. In some practices, the reflection of this model still be traced and the findings of an investigative project undertaken by the National Human Rights Commission of India between 1997-1999 confirmed that a large number of mental health institutions today are still being managed and administered on the custodial care model of cases characterized by prison-like structures with high walls, watch towers, and locked cells.

### **The Bio-Centric Model**

The contemporary bio-centric model of disability regards disability as a medical or genetic condition. The implication shows that the differently abled persons and their families should always wait for normalization through medical cures and miracles. A study of the bio-centric model suggests that it has grown out of the vested interests of professionals to keep the differently abled not educable.

### **The Functional Model**

In the functional model of disability, entitlement to right is varied according to judgments of individual incapacity and the extent to which a person is perceived as being independent to exercise his rights. For example, a child's right to education is dependent on whether or not the child can access the school and participate in the class room, rather than the obligation being on the school system becoming accessible to children with differential abilities.

### **The Human Rights Model**

The human rights model position disability as an important dimension of human culture, and it affirms that all human beings are born with certain inalienable rights. The relevant concepts in this model are; diversity, breaking down barriers, equality & non discrimination, reasonable accommodation, accessibility, equal participation & inclusion and private & public freedoms.

## **Historical Perspectives of Education of Children with Differential Abilities**

### **Special Education**

Special education is a separate system of education for the disabled children outside the mainstream education. Special education is the education of students with special needs in a way that addresses the students' individual differences and needs. It evolved as a separate system of education for differently abled children outside the mainstream class room based on the assumption that the differently abled children had needs which could not be addressed within mainstream schools. Ideally, this process involves the individually planned and

systematically monitored arrangement of teaching procedures, adapted equipment and materials, accessible settings, and within interventions designed to help learners with special needs. Common special needs include challenges with learning, communication challenges, emotional and behavioural disorders, physical disabilities and developmental disorders.

Special education in its simple meaning stands for a type of education that specific and special in nature. It was based on the assumption that children with disability had some special needs that could not be met in mainstream schools therefore; they need to study in a school with other children having similar needs. Thus it is capable of reminding us that it is somewhat different from the education meant for the general population of the students. As a result, the term special education may refer to a distinctive type of education, specifically or specially designed for meeting the needs of exceptional or special children.

The major advantages of special education are that, the children get specialized support and are taught by a specialist having expertise on specific impairments. In the special schools, children grow up with their disabled peers and develop a common culture. The special education helps the children for a better life and caters their daily needs. But the idea of special education has many disadvantages. Mainly, it requires three elements namely trained professionals, special curriculum and infrastructure. The major disadvantage of separate education in separate environment that, the children staying away from families, peers and communities and children usually have to leave their

families and communities to stay in a residential setting because these schools are usually not available in their immediate environment.

### **Integrated Education**

The concept of integrated education inspires the process of interaction of children with special needs and normal children in the same educational settings. Integrated education is the integration of the children with differential abilities in regular schools. It is the educational programme in which exceptional children attended classes with normal children on either a part or fulltime basis. This system suggests that the child has to change according to the existing school system.

The international year of disabled in 1981 influenced the community to think more deeply about the way in which services should be provided to people with disabilities. The United Nations declaration made during that year included the right to reserve an education that would enable students with disabilities to develop their skills and capabilities with others. This right was also ensured in the United Nations Convention on the Rights of the Child in 1990. In India, the concept of integrated education arises as outcome of National Policy of Education, 1986 recommended equal opportunity to all not only for access but also for success.

The integrated education does not create a feeling of differentiation among disabled children. It helps to avoid a complex feeling among the differently abled children. It also provides peer group help in learning from normal children. The concept ensures social integration. It includes love, affection

and respect for disabled children among normal children. The differently abled students may also get help from peers for the entire learning process. It is also less expensive and fewer infrastructures are needed in the schools. For the advocates of integration, the right to education meant the right of the students with disabilities to receive an education that was comparable in every aspect of education received by the majority of students. The concept of integrated education emphasizes methods which concentrate on viewing the student as a whole person. Every part of the individual mind, body, emotion and spirit, should be developed at the same time and be integrated into the whole person.

### **Inclusive Education**

Inclusion is about creating a secure, accepting, collaborating and stimulating school in which everyone is valued, as the foundation for the highest achievement for all pupils. Inclusive education is providing education to differently abled students along with normal students by providing facilities and normal atmosphere as given to normal students. Inclusion describes much more than the acceptance of children with disabilities / exceptionalities in the mainstream. Inclusive education is defined as a learning environment that promotes the full personal, academic and professional development of all learners irrespective of race, class, colour, gender, disability, sexual preference, learning styles and language (NCSNET, 1997). In inclusive education, mainstreaming and integration are viewed as intermediary steps to the ultimate goal of teaching all students together. In inclusive programme, specialized instruction and support are provided to any student who

is in need of support without labeling as disabled or exceptional. In other words, no discrimination is made among the exceptional or non exceptional children. It is a process of increasing the participation of all students in schools including those with differential abilities. It mainly focuses on the restructuring of cultures, policies and programmes in the educational institutions to meet the diversity of educational needs. It acknowledges that all children can learn in the same educational settings. The concept of inclusive education respects the diversities in children based on their age, gender, language and differential abilities. It enables educational structures, systems and methodologies to satisfy the needs of all children.

Inclusive education has increasingly become the focus of debate on discussions about the development of educational policy and practice around the world (Farrell and Ainscow, 2002). The education of children and young people with Special Educational Needs (SEN) and disabilities is now an established by policy objective in many countries (Lindsay, 2007). The legislative and policy trends of the last four decades or so have been a clear shift in the education for the children with special educational needs.

The US paved the way with introduction of the Education for All Handicapped Children Act of 1975, which was subsequently amended as the Individual with Disabilities Education Act (IDEA) in 1990 and updated again in 1997, to promote 'whole school' approaches to inclusion (Evans and Lunt, 2002). The inclusive education movement has been endorsed internationally by UNESCO's Salamanca Statement (UNESCO, 1994) and reflects the United Nations Global

Strategy of Education for All. Inclusive education is now seen as central to human rights and a priority policy objective of all liberal democracies. Originally, the inclusive education movement was focused primarily on people with disabilities and hearing difficulties. More recently the concept of inclusion expanded to embrace those who are at risk of marginalization or exclusion for whatever reason.

Inclusive education sometimes seen as a political strategy based on human rights and democratic principles that confront all forms of discrimination, as part of a concern to develop an inclusive society and to ensure that some students receive additional resources and are not ignored or neglected. The important point is that inclusive education allows children with disabilities to stay with their family and to go to the recent school, just like all other children. To UNESCO, "Inclusive education is concerned with removing all barriers to learning and with the participation of all learners valuable to exclusion and marginalization. It is a strategic approach designed to facilitate learning success for all children. It addresses the common goals of decreasing and overcoming all exclusion from the human right to education, at least at the elementary level and enhancing access, participation and learning success in quality basic education for all".

The National Curriculum Framework for School Education (NCFSE, 2000) brought out by NCERT, recommended inclusive schools for all without specific reference to pupils with Special Educational Needs (SEN) as a way of providing quality education to all learners.

According to NCFSE, "segregation or isolation is good neither for learners with disabilities nor for general learners without disabilities. Social norm is that learners with special needs should be educated along with other learners in inclusive schools, which are cost effective and have found pedagogical practices".

The NCFSE also recommended definitive action at the level of curriculum makers, teachers, writers of teaching learning materials, and evaluation experts for the success of this strategy.

The major aims of inclusive education framework are

- ◆ Encourage whole school and individual reflective engagement and discussion on the development of inclusion
- ◆ Support school professionals to plan, implement and review inclusive policies and practices.
- ◆ Outline and demonstrate processes of individual and organizational planning and implementation
- ◆ Develop an ongoing individual and organizational commitment to inclusive practices and policies.

The policy makers need to realize that an inclusive education system benefits all groups in the society, not just the differently abled. The major educational policies under the programme of inclusive education focusing the needs of all marginalized groups from all sectors in the society. An inclusive education system can be justified according to the following arguments.

- ◆ There must be an educational justification for the requirement for inclusive schools to educate all children in the educational settings that respond to individual differences.
- ◆ The social justification is that inclusive schools are able to change attitudes to difference by educating all children together.
- ◆ There is also an economic justification which is likely to be less costly to establish and maintain schools which educate all children together than to setup a complex system of different types of school specializing in different groups of children.

### Conclusion

Segregated education is the education that the differently abled students are segregated in separate classrooms or schools because of their disability and they often have no access to the same academic and social development opportunities provided to other students. As the name implies, the segregated class room is simply a self contained class room filled with students who have different types of disabilities. Integrated education brings children and others together in one school and it is an alternative to an educational system in which most children attend largely in separate schools. Integrated class rooms are also known as mainstreamed class rooms. To Idol, "Inclusion is 100% placement in general education, whereas in mainstreaming, a student with special needs

is educated partially in a special education program, but to the maximum extent possible is educated in the general education program". That means inclusive education refers to a system in which the differently abled students spend most of their time with other students in the general education classes. The class rooms include students regardless of their abilities and disabilities. The inclusion in this type is not mere physical inclusion but also consider the mindset of all students. In this, the students learn from each other and also learn to respect others' differences and peculiarities.

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# Outcome Based Education and Assessment

Ramya S.  
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## **Abstract**

*Outcome Based Education emphasis on students demonstration of learning outcomes rather than accumulation of course credits. Also, It emphasizes the need to align all aspects of educational process and system to the expected outcomes that all students should be able to proficiently exhibit at the end of the curriculum and that outcomes should be viewed synonymously with grades or simply curricular competition, but rather authentic demonstrations of expected competencies as a result of significant learning experience. The implementation of Outcome Based Education requires consistency across desired outcomes of education, teaching and learning activities, and assessment methods and practices. The implementation of Outcome Based Education in the institution level would entail restructuring of relevant systems and procedures to constructively facilitate the attainment of the desired outcomes of education. The authors conclude that everything in the educational processes and systems should be based on the outcomes, and such outcomes prepares students not only for academic success, but also importantly for life success.*

**Key words** : *Outcome based education, Curriculum assessment, Co- curricular activities, Paradigm shift, Mindset etc.*

## **Introduction**

Outcome Based Education as defined by Spady (1994) means “ clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experience.” The definition explicitly specifies certain markers which should serve as basis of actions and procedures that school must undertake to ensure the proper institution wide implementation of Outcome Based Education.

Tucker (2004) further emphasized this in his description of Outcome Based Education as process that should involve the restructuring of curriculum assessment and reporting practices in education . The changes that Outcome Based Education entails put emphasis on students demonstration of learning outcomes rather than accumulation of course credits. Also, these definitions of Outcome Based Education emphasizes the need to accordingly align all aspects of educational process and system to the expected outcomes that all students should

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be able to proficiently exhibit at the end of the curriculum and that outcomes should be viewed synonymously with grades or simply curricular competition, but rather authentic demonstrations of expected competencies as a result of significant learning experience.

It can be surmised then that the implementation of Outcome Based Education requires consistency across desired outcomes of education, teaching and learning activities, and assessment methods and practices. To organize everything in the educational system (Curriculum, resources, facilities, curricular and co-curricular activities etc) and align them with the deserved outcomes of education, it would be necessary first for schools to have a clear understanding of what outcomes are. Thus the next section addresses the following questions :

What are outcomes and how are they derived and stated?

### **What are the Outcomes?**

The term outcomes lexically defined as “something that follows as a result or a consequence”, “an end product or a result”, and “the way a thing turns out”. One common denominator among these definitions is that they all concur the outcomes, happen as a product or an end result of processes or any antecedent factors or events. In education, outcomes are viewed as the learning results that students are expected to demonstrate across the curriculum. Hence, outcomes in education may vary in terms of level or forms. According to Killen (2000) some outcomes are expected to be demonstrated at a course level (subject related academic outcome) and some are at the programme and institutional levels (cross discipline outcomes). However,

according to , Spady {1994} ‘The most important form of outcomes with which other forms or levels of outcomes should be aligned and those that reflect real life roles that learners will perform the moment they exit the education system, these are called Culminating Outcomes”.

Simply, the course\related and programme related outcomes should be fundamentally linked to the culminating or exit outcomes of education. This practice ensures that education prepares students to perform future life roles. Thus the focus of Outcome Based Education is more on results or products of education rather than content curricular processes (Morke et al. , 2012).

### **Outcome Based Assessment**

The implementation of Outcome Based Education in the institution level would entail restructuring of relevant systems and procedures to constructively facilitate the attainment of the desired outcomes of education. This includes the critical restructuring of assessment methods and procedures employed by educators and institutions in evaluating student performance which serves as evidence of the attainments of outcomes. Assessments plays an important place in the educative process. One of the most comprehensive definitions of assessment provided by American Association of Higher Education (Angelo, 1995, p.7) “An ongoing process aimed at understanding and improving student learning. It involves making an expectation explicit and public, setting appropriate criteria and high standards for learning quality, systematically gathering, analyzing and interpreting evidence to determine how well performance matches

these expectations and standards, and using the resulting information to document, explain, and improve performance.

Proper implementation of Outcome Based Education both in classroom and institutional levels would demand a paradigm shift which includes a shift from teacher centered to learner centered approach and being outcomes- minded. Assessment in Outcome Based Education require a shift in mind set of educators and educational leaders.

Assessment in Outcome Based Education includes the following :

- ◆ What our students have become and able to demonstrate.
- ◆ Learning (demonstration of skills and competencies, outcomes).
- ◆ Teaching and learning as the means to an end.
- ◆ Outcomes inform the practice.

In Outcome Based Education frame work everything should be based on outcomes. According to Bresciani (2006) Outcome Based Assessment is a systematic and intentional process. Assessments used in Outcome Based Education classrooms should be constructively aligned with the outcomes that are expected to be successfully demonstrated at specific stages and curricular levels ( Biggs, 2011, Biggs & Tang, 2007).

Spady ( 1994) specified four operating principles that will guide educators and academic leaders in the implementation of Outcome Based Education.

- ◆ Clarity of focus : Educators should be made aware and conscious about the

outcomes of education each student must manifest or demonstrate at the course level and that these outcomes at the classroom level are connected to the attainment of higher level outcomes.

- ◆ High expectations: Learning outcomes are necessarily connected to higher level outcomes. These connections warrant educators from eliciting higher level of performance from the students which in turn ensures that students successfully meet desired learning outcomes set for a course and consequently enable them to demonstrate outcomes at higher level.
- ◆ Expanded opportunity: Every student is a unique learner. An expanded opportunity should be granted to students in the process of learning and more importantly in assessing their performance. Methods and modalities can be expanded depending upon the type of learners. Findings revealed that students vary on thinking or cognitive styles ( e.g., Abdi,2012,Zhang, 2002). The manifold styles when accommodated appropriately not only on the delivery of lessons but also on the type of assessment would help to yield more productive and successful results from students in terms of demonstrating the learned outcomes.
- ◆ Design Down: In Outcome Based Education context the more important outcomes that should be primarily identified and defined are the culminating ones. Smaller measures can be logically designed and progressively implemented. The first assessment that should be developed and designed for a course is the final assessment. This process

employs the Top-Down Approach which guarantees that all the course assessments are constructively linked and aligned to the desired outcome of the course and ultimately to the culminating outcomes of education.

To sum up, everything in the educational processes and systems should be based on the outcomes, outcomes which extend beyond the academics and reflect real life attributes that the various stakeholders deem pivotal among students who graduate from schools and then integrate to the society as professionals. Outcome Based Education ultimately prepares students not only for academic success, but also importantly for life success.

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# Multimedia Integrated Group Investigation Model: A Boon for Heterogeneous Science Classroom

Pushpamma C. Vadakkal

## Abstract

*The Multimedia Integrated Group Investigation Model is a student centered constructivist strategy for making the learners fully engaged in learning with a research mind and team spirit, which is very essential for learning science. The model includes 3 phases and 16 stages. By implementing this model in classrooms the learner gets training in positive interdependence face to face interaction, individual accountability, social skills, developing self-esteem, and technology skills etc. The learners are provided the advantages of both Cooperative learning and Multimedia instruction. In short the model can be said as a 'two in one' strategy for science instruction.*

**Key words :** *Multimedia Integrated Group Investigation Model, Positive interdependence, Individual accountability, Social skill training, Technology skills etc.*

The teaching learning process is today entering a period of revolution, especially due to the use of modern technology in education. Two very general factors have done much to bring about this development. The first being the information explosion and the second population explosion. Now a days technology is much related with education. Technology is being applied in three general areas of education: General Administration, Evaluation and Instruction

### Instructional Technology

The development of technology for the instructional process is relatively new. Form Early instructional process relied more upon devices such as slate, horn book, blackboard...etc. But during the period 1900-

1950 however technology washed highly upon the shores of education. In the same time span high speed printing techniques, radio, motion pictures, television and other pieces of communication technology were invented and developed.

India has made unparalleled advance in the field of technology and now the youth of India are competent enough to compete with the modern techno scientific world. In spite of these developments of instructional technology, making teaching learning process very effective and making knowledge giants, there is decay and degradation of human values among our learners. So Indian classrooms need a humanistic method which can accommodate value inculcation in

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learners; particularly the social values. The Multimedia Integrated Group Investigation Model can be considered as a boon for inculcating values through Science teaching.

Group investigation Model is one of the cooperative learning strategies developed by Stahl (1995) which has its roots in the model developed by John Dewey and Herbert Thelen. It gives emphasis on process as well as product of science learning and fosters cooperation rather than individualistic competition. Almost all scientific inventories are result of collective work. Hence this group investigation method can be very well used in science education.

It is proved from researches that all cooperative learning methods including group investigation method are efficient enough to inculcate social skill, self-esteem, and values, self-learning and willingness to accept differences in the young minds. But the global focus at present is on scientific and technological literacy achieved in social setting. So that science education can be made as a humanistic enterprise. In order to achieve this goal the investigator integrated multimedia in the group investigation model; without disturbing its fundamental structure.

### **Features of Multimedia Integrated Group Investigation Model**

The model has three major phases including 16 stages. Multimedia were incorporated at appropriate stages for maximizing the learning experiences and to make learners as active participants in learning. Variety, availability and practicability were the criteria for media selection. The stages of this model are described below:

### **Phase 1– Teacher Planning**

This phase includes 2 stages:

Stage 1 : The topic is selected from what they are expected to study. It should be relevant to their lives and also the needs and concerns of the society.

Stage 2 : Teacher collects information from the journals, magazines, newspapers, books and electronic media

### **Phase 2 – Implementation Phase**

Stage 3 : The teacher prepares the students for group investigation and introduces the topic using electronic media (LCD projection, Slide projection, Overhead projection...etc.) In addition to this the teacher may use posters, pictures, specimens...etc.

Stage 4 : The students are asked to identify the subtopics of the main topic. Teacher gives clues and guidelines for identifying the subtopics. When the subtopics are identified the teacher writes it in blackboard.

Stage 5 : Teacher describes what the students are to do in further stages and describes the responsibilities of each team.

Stage 6 : The students are divided into groups each having seven or eight members. The number of groups can be adjusted according to the number of subtopics by making slight changes in the group strength. But each group should be heterogeneous by including above average, below average and average students. The number of average, below average and above average students in each group must follow somewhat the

same ratio. The teams are given the designation 'Research Team' then one subtopic is assigned for each team. The teams can propose their preferences in selecting the subtopic, but the final decision is made by the teacher. Each team is asked to prepare a chart regarding their subtopic, indicating the main learning points in that subtopic. Each team should prepare a chart depicting their subtopic and the learning points and they have to hang it in the classroom next day. So that everyone can have a glance on every subtopic.

Stage 7 : Each team cooperatively plan their Investigation. They meet together and decide the duty of each team member (*This much is done on the first day*)

Stage 8 : The teams are to gather information from books, journals, magazines and electronic media (*They are given two or three days for collecting information*).

Stage 9 : Each team sits together and consolidates the information related to their subtopic. Each team makes a written report.

Stage 10 : Teams plan for presentation of their subtopic before the whole class using LCD. Each team should have at least one or two Laptops or can be done in the media room. They can also use overhead projection, slide projection...etc.

### **Phase 3: Evaluation**

Stage 11 : All teams give presentation of their respective subtopic. They can use any available and relevant media (LCD/OHP/Charts or pictures) for presentation.

During the presentation all students are asked to make short notes of all topics.

Stage 12 : Teacher and peers give a constructive evaluation regarding the clarity, comprehensiveness, appropriateness and appeal of each presentation. Teacher keeps a score card for each team

Stage 13 : After all teams have shared the information teacher asks all the students to pool the information obtained from different teams. All students are supposed to prepare a written report and presentation of the main topic by integrating the information given by different teams. Two days' time is given. Then the class assembles and the teacher asks any one or two students to present the whole report in the class. Here also they have to use at least one medium (charts, pictures, power points, overhead projections) for presentation. Teacher collects and evaluates the written report of all students.

Stage 14 : Students take individual tests. Teacher evaluates answers and assigns scores.

Stage 15 : After evaluation the teams are appreciated. Even the least performed team is also given some kind appreciation. Negative behaviors are constructively pointed out.

Stage 16 : Students themselves reflect on their behavior.

### **Group Investigation Model vs. Multimedia Integrated Group Investigation Model**

In the traditional group investigation model proposed by Stahl (1995), during stage 3 the teacher prepares students for learning

and introduces the topic. To arouse their interest teacher may use text books, examples, pictures and some other printed materials. But in the Multimedia Integrated Cooperative Model the teacher must use other media like posters, specimens and any electronic media such as LCD projection, Overhead projection or slide projection. In traditional Group Investigation Model during the 4<sup>th</sup> stage the students identify different subtopics. Then the teacher announces the subtopics and assigns them to each group. But in the Multimedia Integrated Group Investigation Model students identifies the subtopics under the guidance of the teacher and each team selects subtopics according to their preferences. Each group identifies the learning points of their respective subtopic and prepares a chart showing the subtopic and the learning points and hangs it in the classroom till they finish learning the whole topic. In traditional Group Investigation Model during the 8<sup>th</sup> stage it is not compulsory for the students to use electronic media. But in MMIGIM it is compulsory for the students to use at least one electronic media for collecting information. In traditional Group Investigation Model during stage 10 each group present the written report orally before the whole class. But in MMIGIM during stage 10 they are to prepare and present through any technological device. In traditional Group Investigation Model all students are supposed to prepare a written report of the whole topic and present it orally. But in MMIGIM they are to prepare a typed report and present it through any technological device.

Thus this MMIGIM paves way for developing scientific and technological literacy in a social setting and helps the learner's development according to the global focus.

### **Tenets of Multimedia Integrated Group Investigation Model**

- ◆ Positive interdependence
- ◆ Individual accountability
- ◆ Face to face interaction
- ◆ Social skill training
- ◆ Training in technology skills

### **Merits of Multimedia Integrated Group Investigation Model**

MMIGIM includes the merits of both multimedia and cooperative learning. The foremost advantage is that it develops technological skills among the learners in a cooperative way. It avoids opportunity for unfair competition resulting in a division of winners and losers which in turn creates a kind of hostility among the students. So children learn better in an anxiety free environment. It makes teaching learning more learner centered through constructivist ideology. It advocates interactive teaching learning instead of teacher's lecture or demonstration or mere discussion. It provides better opportunities for learners to develop successful learning and communication strategies. Thus it emphasizes social learning rather than isolated learning. It makes students develop fully through healthy interaction and so they learn best. They cooperate each other for obtaining the optimum. It promotes cognitive growth and higher order thinking skills. Thus it makes the learner a cooperative, responsible, and productive social being. It redefines the role of teacher as a 'guide at side' or a facilitator rather than a lecturer or a store of subject knowledge. Student performance is evaluated better in terms of group achievements in a less threatening group situation instead of

competitive situation. So the learners develop a sense of security, self confidence and self-esteem. They learn to get along with people of different opinions, backgrounds, status, religion, caste, color, creed...etc.; which will help them to live in a democratic society. At the same time it helps to develop democratic leadership skills among the learners. The students are encouraged to seek help from peers and to give help to peers. They are trained in the art of getting and giving cooperation. It also provides opportunity to achieve deeper understanding and insight in the subject matter and thus improves academic achievements.

Each group is called by the name 'Research Team '. After each evaluation the teams are given reinforcement. Thus the learner is always kept motivated, encouraged and stimulated. Students themselves plan and implement learning and thus they get training in planning and organizing tasks.

Integration of Multimedia in Group Investigation Model provides for content - rich paedocentric learning. Animations and such other multiple media provides direct or live experience for the new concept to be learned. The virtual experience in science education helps to save money, time and effort and also helps to explain and illustrate certain complex and abstract concepts in very effective and interesting way. Through multimedia learners can listen, view and explore situations which are otherwise not possible. Dissections in biological science can be done through virtual means without offending the ethical code. The multimedia integration helps to make the presentation at a much greater depth than a traditional form of written projects. The electronic documents

made by the students can be easily shared. When they recognize this, they give greater value in producing a product of high standard. The usage of multimedia resources helps the learners in developing skills like searching, selecting and retrieving information and to use the data appropriately in the curriculum. In short this model helps the learner in developing technology skills, communication skills, social skills and social values and also helps in improving academic achievements particularly in Biological science.

However there are a few constraints in implementing this model in our classrooms. Teachers must be willing and decided to use media resources and for this the teacher himself should have enough technology skills. This MMIGIM requires additional work load from teachers as there are different elements to be integrated systematically to implement this model in classrooms. School should have enough access to media resources. Moreover the school time table must be made flexible according to the need and nature of subject matter.

### **Conclusion**

Study published by center for public resources in 1982 indicated that the main reason our youngsters lose job because they cannot get along with their co-workers. So it is the teacher's job to teach social skill during the school age itself because of two reasons: 1) these skills are vitally important for future success, 2) these skills are not generally being learned at home or anywhere else. More over today's youth should have enough training in technology skills to thrive successfully in this world of technology. When they are able to achieve these objectives they



will definitely develop high 'Self-esteem' which is the 'key' to success in life. This MMIGM will be an effective tool in the hands of a dynamic teacher to achieve the above mentioned goals.

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# Effectiveness of Social Skills Intervention on Developing Social Skills among Juvenile Delinquents

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## **Abstract**

*Each juvenile offense is the outcome of a complexity of causes, some of whose origins date back years before the committal of the offense and others whose origins are more obviously and immediately connected with the act of delinquency. A worthwhile education should target the total development of learner's personality. But in the present system emphasis has only been given to transmission of knowledge and cultivation of occupational skills. For this study the investigator selected experimental method with single group pre-test post-test design and the sample consisted of 30 delinquents from the juvenile home in Poojappura, Thiruvananthapuram. The study was conducted using instructional package consisting of different games. The study revealed that delinquents developed their social skills after the implementation of the intervention. So it was concluded that the social skill intervention is effective for the development of the component self-confidence among juvenile delinquents.*

**Key words** : *Juvenile delinquency, Social skills, Juvenile offense etc.*

## **Introduction**

Child behavior is important not only from the child point of view but also from adult point of view. Adult behavior is deeply rooted in childhood experiences. In the present society crime is an aspect of life that is present whether it is acknowledged or ignored. Crime is being committed more frequently and more often by adolescents (13-18 age group). Juvenile delinquency has been on the rise and yet as delinquency rises so does the number of delinquents that go to correctional facilities to serve time for the crimes they have committed.

Researches show that previously incarcerated youth return to the justice system at alarmingly high rates (sametz, Ahren, Yuan, 1994.). Eventually incarceration youth have to come out of the correctional facilities and be re-integrated back into main stream society once time has been served. Training in social skills is important for the delinquent to develop the ability to communicate, persuade and interact with other members of the society, without undue conflict or disharmony. Delinquency itself is socially inadequate adjustment on the part of the individual to difficult situations. The factors

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which go to make up these difficult situations, together with the mental and physical conditions which influence an individual's capacity to adjust, constitute the causes of delinquency.

Each juvenile offense is the outcome of a complexity of causes, some of whose origins date back years before the committal of the offense and others whose origins are more obviously and immediately connected with the act of delinquency. It has been shown that the different set of causes is involved in each individual case. It is impossible therefore to state the group of causes which will invariably result in any particular offense.

In spite of the great complexity and diversity of the causes of delinquency, cases are found to have many factors in common. The different combinations of these factors are largely responsible for the differences in offenses. It should be possible, therefore, to draw up a list of conditioning factors from a study of a large number of cases which would cover most of the possibilities, and from which could be isolated any group or combination of factors applicable to a particular case. Such a list should prove to be a diagnostic aid for all workers in the field of juvenile delinquency.

Training in social skills continues to be an important issue among researchers and clinicians in rehabilitation. Studies examining social skills deficits in early childhood and adolescence demonstrate that youthful maladjustments are strongly related to an assortment of behavioral problems.

Social skills are conceptualized in this study as learned behaviors occurring

primarily within intimate group. This study rests on the assumption that positive social skills are needed for mutually beneficial interactions with others in social situations and the lack of positive social skills can often lead to problems in interpersonal relationships. Social skills training is useful for children and adolescents, who must learn to interact positively with a multitude of people, including peers, teachers, parents, police and other criminal justice professionals.

### **Need and Significance of the Study**

The child acquires knowledge as a result of education; Education plays a major role in the development of character building, personality development and preparation for adult life. It also increases the consciousness of other cultures, improves emotional unity and develops interpersonal relationships...

A worthwhile education should target the total development of learner's personality. But in the present system emphasis has only been given to transmission of knowledge and cultivation of occupational skills. This has created a moral vacuum in the life of the individuals. They grow up into people who display violence, selfishness, arrogance etc. Inculcation of empathy among students may help to carve them into fruitful generation who are able to find out answer to so many problems that humanity face today. The need for empathy education is clear from the following arguments.

Social skills intervention helps the delinquents to expand their behavioral repertoires and succeed in different social situations. The basic presumption is that appropriate abilities to respond in different situations can be coached through structured

learning situations. These present study represents a structured application of behavioral learning techniques aimed at helping the delinquents to build a repertoire of skills and ability for adequate functioning in the community.

### **Statement of the Problem**

The purpose of the present study has to undertaken with the objective of testing the effectiveness of a specially prepared instructional package for developing social skills among the delinquents. Hence the study is entitled "Effectiveness of Social Skills Intervention of Developing Social skills among Juvenile Delinquents".

### **Definition of the Key Terms**

#### **Social Skills**

Social skill is a personal trait that enables one to mix well with people. It includes qualities like co-operation, communication, tolerance etc.

In the present study social skills refers to the socially acceptable learned behavior that enable children to interact with others in ways that elicit positive and avoid negative responses and lead a fruitful life in the society.

#### **Social Skill Intervention**

In this present study Social Skill Intervention is a student centered teaching approach that allows student to interact with each other in a structured manner. This method helps students to learn, work together, solve the problem and be a responsible member in the society and developing empathy. The intervention program consists of multimedia, printed materials, role plays, various games etc.

### **Juvenile Delinquents**

A child or youth minor who deviates seriously from the norms of his culture or society (Mangal, 2009) Juvenile delinquents are those children or adult who exhibit considerable deviation in term of their social adjustment and to posses criminal tendencies usually indulge in anti social behavior. Under the Juvenile Justice act (1986) boys and young criminals up to 16 years of age were considered as juveniles. But Juvenile justice act(2000) increased the age limit of the male delinquent from sixteen years to eighteen years.

### **Objectives of the Study**

The objectives of the study are :

- ♦ To find out whether there exist a significant difference in the means of pre- test and post test scores of the experimental group of juvenile delinquents.
- ♦ To find out whether there exists significance difference in the means of pre-test and post test scores of Delinquents with respect to the components:
  - ♦ Empathy
  - ♦ Self Confidence
  - ♦ Responsibility and
  - ♦ Co-operation.

### **Hypotheses of the Study**

The hypotheses formulated in the study are :

- ♦ There exists a significant difference in the pre-test and post – test score of the experimental group.

- ◆ There exists a significant difference in the means of pre-test and post-test scores of social skills with respect to the components
  - ◆ Empathy
  - ◆ Self Confidence
  - ◆ Responsibility and
  - ◆ Co-operation.

#### Methodology in Brief

In the present study the investigator selected experimental method with single group pre-test post-test design.

#### Variables

- ◆ Independent variable – Social Skills Intervention
- ◆ Dependent variable – Social skills of Juvenile Delinquents

#### Population for the Study

The population of the present study comprises of the juvenile delinquents in Kerala.

#### Sample of the Study

The investigator selected 30 delinquents from the juvenile home in Poojappura, Thiruvananthapuram. The sampling technique used by the investigator was purposive random sampling.

**Table 1**

**Results of the test of significance of pre-test and post-test scores of Social Skills among Juvenile Delinquents.**

Test	N. of students	Mean	Standard Deviation	t value	Level of significance
Pre-test	30	92.533	6.735	6.88	Significant at 0.01 level
Post-test	30	96.100	6.493		

#### Tools and Techniques

- ◆ Lesson transcripts based on each component of social skill, prepared by the investigator.
- ◆ Social skill rating scale prepared by the investigator.

#### Statistical tools used

- ◆ Standard deviation and
- ◆ t- value

#### Procedure of the Study

The experimental study was conducted in the Juvenile home at Poojappura for 15 days. During these period social skill intervention, using the prepared lesson transcript was implemented. Prior to the implementation a pre-test was administered in the group.

The instructional package consist of the games: Dumb cherad, Storytelling, Guess who, Dressing up the partner, Hunter and Watchman, Kite and Brood-hen, The ball out of the circle, Four elements, Toils of troubles, The best shoot site on a chair etc.

After the execution of the experiment a post-test was administered

#### Analysis and Discussion

The pre-test and post-test scores were analysed using t-test. Its results are presented here.

As the table value (6.88) is greater than the table value at 0.01 level, it is inferred that the social skill intervention is effective for developing social skill among Juvenile delinquents.

#### Tools and Techniques Used for the Study

- ◆ Lesson transcript based on each components of social skill, prepared by the investigator.
- ◆ Social skill rating scale prepared by the investigator

#### Statistical Techniques Used in the Study

##### Descriptive Statistics

- ◆ Standard Deviation
- ◆ Skewness
- ◆ Kurtosis

##### Inferential Statistics

- ◆ Paired t-value

**Table 2**

**Result of the test of significance of Pre-test and Post-test scores on the component Empathy.**

Test	N. of students	Mean	Standard Deviation	t value	Level of significance
Pre-test	30	22.76	2.68	2.56	Significant at 0.05 level
Post-test	30	23.77	2.45		

In the t value (2.56) shows that there is significant difference between the means of pre-test and post-test at 0.05 level. As

the mean of post-test is higher it is concluded that the Social skill intervention is effective in the case of the component empathy.

**Table 3**

**Result of the test of significance of pre-test and post –test scores on the component co-operation.**

Test	N. of students	Mean	Standard Deviation	t value	Level of significance
Pre-test	30	23.33	2.66	4.51	Significant at 0.05 level
Post-test	30	24.50	2.59		

The t-value calculated (4.51) shows that the difference in means of pre-test and post-test is significant at 0.05 level. As the mean of post-test is higher it is concluded

that the social skill intervention package implemented is effective with respect to the development of the component co-operation.

**Table 4****Result of the test of significance of pre-test and post –test score for the component Responsibility**

Test	N. of students	Mean	Standard Deviation	t value	Level of significance
Pre-test	30	23.53	2.725	5.29	Significant at 0.05 level
Post-test	30	24.50	2.825		

The table shows that the mean score of post-test is higher than that of pre-test. Also the t-value (5.29) is greater than the table value. So it is inferred that the social skill intervention is effective.

**Major Findings and Conclusions.**

1. The t-value obtained for the pre-test and post test scores is 6.88. This is greater

than the table value at 0.05 levels. This shows that there exists significant difference between the means of the pre-test scores of delinquents in the experimental group. So it is inferred that delinquents developed their social skills after the implementation of the intervention.

**Table 5****Result of the test of significance of pre-test and post –test scores for the component self-confidence**

Test	N. of students	Mean	Standard Deviation	t value	Level of significance
Pre-test	30	22.90	2.48	2.72	Significant at 0.05 level
Post-test	30	23.933	2.28		

As the t-value calculated (2.72) is greater than the table value at 0.05 level it is clear that the difference is significant. So it is inferred that the social skill intervention is effective for the development of the component self-confidence.

2. The critical ratio for the component Empathy (2.56) is greater than the table value at 0.05 level. This shows that there is significant difference between the means of the pre-test and post test

scores of delinquents for the component Empathy.

3. The critical ratio for the component co-operation(4.51) is more than the table value at 0.05 level. This shows that there is significant difference between the means of the pre-test and post test scores of delinquents in the experimental group with respect to the component co-operation.

4. The critical ratio (5.29) is more than the table value at 0.05 level. This shows that there is significant difference between the means of the pre-test and post test scores of delinquents in the experimental group for the component Responsibility.
5. The critical ratio 2.72 is more than the table value at 0.05 level. This shows that there is significant difference between the means of the pre-test and post test scores of delinquents for the component self-confidence.

#### **Educational Implications.**

- ◆ As the study has proved that the social skill intervention is effective on developing social skills among juvenile delinquents, teachers and the care takers can adopt this method for the same.
- ◆ The intervention may be developed further by the expert hands and may be used for the transactions of Empathy, Co-operation, Responsibility and Self-confidence.
- ◆ The videos and pictures used in the intervention attracted the children very much and so such materials can be effectively utilized for the development social skills of Juvenile delinquents.
- ◆ The lesson transcript developed for this research can be reviewed and used further.
- ◆ Teachers can take this research as preliminary guide to get idea of how to inculcate social skills among children.
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# A Critical Analysis of Problem Posing in the Mathematics Curriculum at Secondary Level

Minikumari D.

## Abstract

*Mathematics curriculum has undergone various changes from time to time to fulfill the goals of Mathematical Education and to its social relevance. Mathematics is considered as a compulsory subject of general education. But when separate periods are allotted for learning and teaching mathematics, these Basics of Mathematics tend to be isolated from the real context and taught formally. The present study is an attempt to find out the number of problem references in the developmental and testing stages of mathematical concepts at secondary level. The Mathematics Textbook (SCERT, Kerala, Standard IX) was analyzed in terms of real-context based and formal problem references used for developmental and testing stage. The study revealed wide range of contexts embedded with mathematical components. The investigator concluded that basics of mathematics can also be strengthened with the help of problem references at the developmental as well as testing stages.*

**Key words** : *Problem posing, Mathematics, Curriculum, Secondary level etc.*

## Introduction

Mathematics is probably the oldest organized discipline of human knowledge, with a continuous line of development spanning over 5,000 years. It is a body of ideas structured by logical reasoning. The facts, principles and methods developed in early Mesopotamia, Egypt and Greece play central roles in the learning of the subject even today. The sustaining social interest in mathematics is based on at least four major themes in its development; (1) the arithmetic of whole numbers and fractions for recording and ordering commerce and practical affairs; (2)

The ideas of Algebra, Geometry, Statistics and Calculus providing valuable models in the biological and physical world; (3) the aesthetic qualities of mathematical structures embodied in art; (4) the patterns of logical reasoning in mathematical proofs carried over in many other disciplines.

Mathematics curriculum has undergone various changes from time to time to fulfill the goals of Mathematical Education and to its social relevance. Mathematics is considered as a compulsory subject of general education. But when separate periods are allotted for learning and teaching

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mathematics, these Basics of Mathematics tend to be isolated from the real context and taught formally. At its best, it may be the abstraction of the highest order. But only the minority of students reaches this level. As far as the majority in this system is concerned, the process involves sheer rote memorization, repeated drill, examination orientation, threat of punishment etc. Observation of hundreds of classroom situations in the ordinary school show that, on the whole, the focus on skills and mechanical repetition seems to predominate. In many schools, even the skills are not actually developed by the pupils or drawn out of mathematical problem reading, analyzing, creative hypotheses formulation and testing them by using the relevant data. An artificial problem - very much unlike the problem that one faces in real life - is presented before the pupil, which might include mathematical components too. The teacher 'explains' the problem and 'how to do it' and get the answer. Most pupils do not really seize the problem. The teacher artificially 'motivates' the pupils to 'do the sum', and tries to show 'how to do it'. When the pupil does not grasp it, teacher himself does it for the pupil and the pupils copy the steps in their notebook. Occasionally we do find innovating and resourceful teachers who can introduce mathematical problems close to our conditions.

Problems can be especially appealing when they spring from the environment in which students live. But in the ordinary classrooms this phenomenon is getting less

and less. Most pupils wait for the teacher or his 'deputy' to work out the problem on the blackboard and then copy the steps and the answers in their notebooks. When this happens, School Mathematics gets isolated not only from its practical context, but also from the true world of joyful mathematics. This would turn the young minds wrestling with mathematical problems to a veritable hell of drudgery, routine and mechanization. Buishaw and Ayalew (2013) attempted a document analysis to evaluate the adequacy of integration of problematic situations and general problem-solving strategies (heuristics) in grades 9 and 10 mathematics textbooks.

### **Objective**

To find out the number of problem references in the developmental and testing stages of mathematical concepts at secondary level.

### **Method Adopted**

The Mathematics Textbook (SCERT, Kerala, Standard -X) was analyzed in terms of real-context based and formal problem references used for developmental and testing stage.

### **Results and Discussion**

#### **Analysis of mathematics textbook - Standard X- Part I**

Based on the analysis of chapter "Arithmetic Progression", the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified is given as Table 1

**Table 1**

**Number of problem references at developmental stage of Mathematics concepts and principles as well as at the testing stage in the chapter Arithmetic Progression**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	10	-	10
Testing stage	37	3	40

For the concept development, 10 formal problems are used. Illustrations using tabular devices are also used effectively. 40 practice problems are given at the testing stage of which only 3 are real world context-based problems. The approach is through empirical measurement and inferences are followed by an enormous amount of formal written exercises.

Based on the analysis of chapter “**Circles**”, the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified is given as Table 2

**Table 2**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Circles**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	11	-	11
Testing stage	25	-	25

For the development of each concept, formal examples with appropriate diagrams are presented. In the exercises, there are no typical real life context-based problems. 11 formal types of problems are used at the developmental stage and 25 such problems are used at the testing stage.

Based on the analysis of chapter “**Real Numbers**”, the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified is given as Table 3

**Table 3**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Real Numbers**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	22	-	22
Testing stage	15	-	15

The concepts, methods of solutions and other sub units are developed formally. 37 formal problems are presented, of which 22 are at the developmental stage and 15 are at the testing stage. Any typical type of context-based problems is not given.

Based on the analysis of chapter “**Quadratic Equations**”, the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified is given as Table 4

**Table 4**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Quadratic Equations**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	21	-	21
Testing stage	32	2	34

Revision of simple equation is followed by formal treatment of simultaneous equations. The steps in the formal proof are stated clearly. Only two application problems from real life are suggested at the testing stage. Very systematic illustrations and drills are given for the new skills. For concept development, 21 formal examples are used for all the sub sections. At the developmental

stage, it doesn't include any real context-based problems.

Based on the analysis of chapter “**Tangents**”, the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified is given as Table 5

**Table 5**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Tangents**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	6	-	6
Testing stage	22	-	22

Geometrical proofs are presented at the developmental stage. Theoretical geometry of circles is also discussed. There can be no complaint that this is formally treated, because formal proofs are expected to be studied at this stage. However, for the student who has not reached formal operational stage for dealing with these for want of concrete operational base, the teacher might think of the needed bridges. 22 practical problems with diagrams are given,

but they are of a formal nature. (But students were found to have difficulties)

#### **Analysis of mathematics textbook - Standard X - Part II**

Based on the analysis of chapter “**Polynomials**”, the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified is given as Table 6

**Table 6**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Polynomials**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	25	-	25
Testing stage	42	-	42

This unit is entirely symbolical and formal. There are 25 formal problems presented for the development of the theorems – Remainder Theorem and Factor Theorem. All exercises suggested at developmental and testing stages are formal. The environmental

oriented and picture –oriented examples are not suggested in this chapter.

Based on the analysis of chapter “**Solids**”, the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified is given as Table 7

**Table 7**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Solids**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	16	6	22
Testing stage	24	11	35

All the mathematics concepts and principles are derived through induction and from observational study of models. Pictures of different concepts are given as diagrams. The terminal behavior of course is that children should get the results from imagined pyramids or even from symbols.

Cross section of a square pyramid, its height, slant height and the relationship between height, slant height and base are all explained through pictures and explanations. Here too experiments showed that most students had difficulty with three dimensional figure, especially about differentiating between the slant height and the 'hidden' height of the pyramid itself.

Surface area and volume of a cone are developed through pictures, explanations and invitation to improvise cylindrical vessel and a conical vessel having the same height and same

radius and to measure out sand and discover that volume of conical vessel is one-third of the volume of cylinder. For the development of the 'frustum of a cone', popular environmental words are used which can help to relate with everyday situations and understand the concept. There is only one real context-based problem.

17 application (real context) problems are given, of which six are used at the developmental stages of the mathematical concepts. Useful pictorial illustrations are also given. All the concepts are developed through verbal real world problems numbering 6 at the developmental stage and 11 at the testing stage in addition to the 40 formal problems.

Based on the analysis of chapter "Trigonometry", the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified are given as Table 8

**Table 8**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Trigonometry**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	3	4	7
Testing stage	21	7	28

The unit is started formally after the review of the related topics. The second half of the chapter, dealing with angle of elevation, depression etc. contains a high practical element with 4 practical problems and 7 highly practical activities. Seven illustrated at the developmental stage, of which 4 are real context based. 28 problems are given as practice problems at the testing stage, of which 7 are real context based, Trigonometric table is given at the end of the

chapter. To familiarize the eminent mathematicians (Euler, Gauss, Lobachevski, Henric Abel), the pictures are given at the end.

Based on the analysis of chapter “**Analytic Geometry**”, the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified are given as Table 9

**Table 9**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Analytic Geometry**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	5	-	5
Testing stage	18	-	18

All the exercises are formal. The approach is through empirical measurement and the inferences are followed by enormous amount of formal written exercises. For the concept development 5 formal examples are used at the developmental stage and 18 at the testing stage. No real context oriented

problems are seen. Pictorial examples are given as exercises.

Based on the analysis of chapter “**Statistics**”, the number of problem references as formal and real-context under the developmental stage as well as the testing stage identified is given as Table 10

**Table 10**

**Number of formal problems and real context based problems in the developmental stage and testing stage for the chapter Statistics**

Stage	Formal problems	Real context based problems	Total problem references
Developmental stage	-	5	5
Testing stage	-	10	10

Students are invited to everyday life problems involving the concepts Mean, Median, Mode with the help of environmental problems as examples (5 at the developmental stage and 10 at the testing stage). Pictures of eminent mathematicians namely Riemann, Cantor, Hilbert and Srinivasa Ramanujan are given at the end of the chapter.

After the analysis of the mathematics textbook, the investigator identified the different units under different branches of mathematics. Six branches are presented at secondary level. Some new branches like Analytical Geometry is presented at standard. The secondary school mathematics textbooks provide numerous real contexts of problem references either in developmental stage or at the testing stage. The contexts have the exact picture of the society, so that students can familiar with the real world problems that may confront in their real life.

### **Discussion**

From the detailed analysis of the mathematics textbooks ( $X^{\text{th}}$ ), the investigator found a wide range of problem references as formal and real-context based at the developmental stage as well as in the testing stage. There are sufficient number of worked out examples for the meaningful formation and attainment of mathematical concepts and principles. Pictorial and diagrammatic representations are given wherever necessary. Though the illustrations are simple, it invites the students to complete the process in solving certain problems. There are numerous situations for problem posing and problem representations at the developmental stage.

Gradation of the concepts is well enough for the meaningful understanding of mathematical components.

It is better to give a diagram showing the inter connectedness among the mathematical concepts.

Concept mapping would strengthen and culminate the mathematical connections, which lead the learners to develop mathematical communications.

The inter connectedness of the mathematical branches like Arithmetic, Algebra, Geometry, Trigonometry, Analytical Geometry etc to be emphasized in its appropriate forms.

This would help the learners to perceive the meaning of mental representations as a gate way to solve the problems in mathematics. Concept Mapping would help the learners build their own pre-requisites and can transfer in similar situations they are confronted. Conceptual understanding is important for the students for in-depth analysis of mathematical concepts. When students understand mathematics, they are able to use their knowledge 'flexibly' they combine factual knowledge, procedural facility and conceptual understanding in powerful ways,

Learning the 'basics' is important; however, students who memorize facts or procedures without understanding often are not sure when or how to use what they know. In contrast, conceptual understanding enables students to deal with novel problems and settings. Finding ways to help students ask



answer mathematical questions can be the basis of sound mathematical and creative thinking and in-depth understanding of mathematics.

### Conclusion

From the in-depth analysis of the textbooks, the investigator tried to highlight the findings of Shoenfeld (1992), who described a 'spectrum' of understanding regarding mathematics. At one end, math is seen as a body of facts, procedures and formulas. If one has learned the procedures, one knows the math. At the other end, math is seen as the science of patterns, closely akin to the sciences. Shoenfeld believed "a curriculum based on mastering a corpus of mathematical facts and procedures is severely impoverished- in much the same way that the English curriculum would be considered impoverished if it focused largely, if not exclusively, on issues of grammar" this perspective was echoed by the National Research Council (Kilpatrick, Swafford & Findell, 2001).

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## Case Study

# Developing ASK in Organic Farming among Prospective Teachers

Johnson Mathew

### Abstract

*For the increased production of food materials people started to depend largely on the use of chemical fertilizers and chemical pesticides in agriculture. Though the use of such chemicals helped immensely for the increased production of food materials, various serious side effects were also coupled with it. Though the disadvantages of using chemical pesticides and chemical fertilizers and advantages of depending on Organic Farming is widely discussed, the use of Organic Farming has not become practically widespread. By making all students in all schools aware about it, the vision and mission of Organic Farming can be popularized in the country to a large extent. For this purpose it is the teachers and future teachers who are to be oriented first. The present project was an output of that intention. The sample of the study consisted of all the first year B.Ed. students of the St. Thomas college of Teacher Education, Mylacompu. Through the execution of the project much improvement was made among the B.Ed. trainees with respect to their: Attitude towards Organic Farming; Skills in doing cultivation by the method of Organic Farming and Knowledge in doing Organic Farming.*

**Key words :** *Organic farming , Prospective teachers, Chemical fertilizers, Diminishing return, Green revolution etc.*

### Introduction

One of the most important things for sustaining life in the world is food. Food is an essential part of everyone's lives. It gives the energy and nutrients to grow and develop, to move, work, play, think and learn and to be healthy and active.. The body needs a variety of nutrients such as protein, carbohydrate, fat, vitamins and minerals. All these nutrients one get are from the food he/

she eats. So without having food sufficient in quantity and quality one cannot maintain proper health and even life. This importance of food items leads men to think on the needs of producing food materials more in quantity.

For the increased production of food materials people started to depend largely on the use of chemical fertilizers and chemical pesticides in agriculture. Though

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the use of such chemicals helped immensely for the increased production of food materials, various serious side effects were also coupled with it.

### **Need of Organic Farming**

With the increase in population our compulsion would be not only stabilize agricultural production but to increase it further in sustainable manner. The scientists have realized that the "Green Revolution" with high input use has reached a plateau and is now sustained with diminishing return of falling dividends. Thus, a natural balance needs to be maintained at all cost for existence of life and property. The obvious choice for that would be more relevant in the present era. When these agrochemicals which are produced from fossil fuel and are not renewable and are diminishing in availability. It may also cost heavily on our foreign exchange in future.

### **The Key Characteristics of Organic Farming**

- ◆ Protecting the long fertility of soils by maintaining organic matter levels, encouraging soil biological activity, and careful mechanical intervention.
- ◆ Providing crop nutrients indirectly using relatively insoluble nutrient sources which are made available to the plant by the action of soil micro-organisms
- ◆ Nitrogen self-sufficiency through the use of legumes and biological nitrogen fixation, as well as effective recycling of organic materials including crop residues and livestock manures.

- ◆ Weed, disease and pest control relying primarily on crop rotations, natural predators, diversity, organic manuring, resistant varieties and limited (preferably minimal) thermal, biological and chemical intervention.
- ◆ The extensive management of livestock, paying full regard to their evolutionary adaptations, behavioral needs and animal welfare issues with respect to nutrition, housing, health, breeding and rearing.
- ◆ Careful attention to the impact of the farming system on the wider environment and the conservation of wildlife and natural habitats

### **Rationale for Undertaking the Project**

Though the disadvantages of using chemical pesticides and chemical fertilizers and advantages of depending on Organic Farming is widely discussed, the use of Organic Farming has not become practically widespread. This system of agriculture has not attained the deserved importance. Hence a large scale awareness creation about the need and significance of Organic Farming is a felt need of the time. By making all students in all schools aware about it, the vision and mission of Organic Farming can be popularized in the country to a large extend. For this purpose it is the teachers and future teachers who are to be oriented first. Since our institute is meant for pre-service teacher education, we intended to find out an effective strategy to develop a positive attitude towards Organic Farming and to equip the trainees with sufficient skill and knowledge in this system of agriculture. The present project was an output of that intention.

### **Execution of the Project**

Title of the study was **Developing ASK in Organic Farming among Prospective Teachers.**

### **Definition of Key Terms**

ASK stands for Attitude, Skill and Knowledge

In the present study ASK represents attitude of B.Ed. trainees towards Organic Farming, skill of them for doing Organic Farming and their knowledge in Organic Farming.

### **Organic Farming**

Organic Farming is a system of agriculture which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc.) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, and biological system of nutrient mobilization and plant protection.

### **Objectives of the Case Study**

1. To develop a positive attitude among prospective teachers (B.Ed. trainees) towards Organic Farming.
2. To develop skill among prospective teachers in Organic Farming.
3. To develop adequate knowledge among prospective teachers in Organic Farming.
4. To equip prospective teachers for the transmission of ASK in Organic Farming among school students.

### **Methodology in Brief**

Experimental method with single group, pre-test post-test design was used for the study.

The sample of the study consisted of all the first year B.Ed. students of the college.

The sample size was 100. Of them 84 were female and 16 were male students.

### **Procedure of the Study**

#### **a. Pre-test**

Before beginning the study a pre-test was administered on the sample using the tool prepared already. The purpose of the test was to assess the position of the B-Ed. students with respect to:

- a. Attitude towards Organic Farming; and
- b. Knowledge in doing Organic Farming

The scores obtained by the students at the pre-test were analyzed and the position of the students with respect to the attitude towards Organic Farming and their knowledge in it before the implementation of the project was determined.

#### **b. Orientation on Organic Farming**

Before implementing the project, an orientation program on Organic Farming was conducted in the college. The class was led by the Agriculture Officer Smt. Manas D. of our Grama Panchayath (Kumaramangalam Grama Panchayath). All the 1<sup>st</sup> year B.Ed. students participated in the class. The details regarding all aspects of Organic Farming was well explained and discussed in the class.

#### **c. Land Setting**

The land already identified for doing Organic Farming was made ready by spade work. It was done by the students on group wise. The whole site was divided into ten sections and the charge of each section

was allotted to each of the ten groups already formulated.

#### **d. Collecting Vegetable Seeds and Cow-dung**

Different items of vegetable seeds which were pre-determined were collected from the local farmers / market. The vegetable items included pulses of different kinds, bendai (ladies finger), bitter-gourd, snake-gourd (padavalam), koval, bringals, chilli etc. Seedlings of cauliflower were also collected. Beside collecting the required type and items of vegetable seeds and seedlings a large quantity of cow-dung was also collected from the local farmers.

#### **e. Sowing of the Seeds**

All the seeds before sowing were put into water for one day. It was done for easy and healthy sprout of the seeds. In the orientation class given by the agriculture officer this suggestion was given to be strictly followed.

In the next day evening the seeds, which were put into water, were sowed in the sites which were prepared ready for cultivation. The inauguration of the vegetable cultivation was done as a function and a ceremony and the inauguration was done by the manager of the college, Rev. Dr. Francis Alappat.

While doing the cultivation of the seeds a senior citizen called Mathew chettan who is very efficient in cultivation, especially in Organic Farming was present there for providing necessary help and suggestions regarding the ways of cultivation. Besides him some more local farmers who were interested in Organic Farming were also present in the

site for giving necessary suggestions and encouraging the students and teachers involved in Organic Farming.

Sowing the seeds in the land was also done by group wise as done in the ease of setting the land for cultivation. As it was a group wise activity almost all members in each group participated in it actively. For planting the seeds each group prepared required number of pits and ridges around the pits. Sufficient quantity of dried cow-dung which was collected early was put in to the pits and mixed with soil. Then the seeds were planted in the pits. Followed by this, sufficient quantity of water was mildly poured in to the pits which were rounded by ridges. Thus the planting of all seeds was completed in the same day. The participation of local resources helped and encouraged the students very much. Tea and snacks were provided by them.

#### **f. Watering and Nurturing**

Within 2-3 days almost all seeds were sprouted. Watering was started on the same day of cultivation. It was the duty of each group to water and nurture the small vegetables of their own sites. The watering and nurturing was continued until the end of the project by the same group in their own sites.

#### **g. Preparation and Application of Organic Fertilizers**

In addition to the cow-dung dust put into the pits at the beginning of the cultivation, organic fertilizers were applied to them continuously on proper intervals of time. Such organic fertilizers were prepared by the students themselves with the assistance of teachers and farmers of the local community.

The main organic fertilizer prepared and used was "Cow-dung Jeevani". It was prepared by mixing cow-dung, peanut cake and neem cake. The ratio of materials of cow-dung, peanut cake, neem cake and water was 5:1:1:5. The viscous liquid thus prepared was stirred well. It was kept for at least three days so that it became fermented. The fermented liquid was further diluted for applying to the vegetables. For diluting it, in one litre of the liquid 9 litres of water was added. The organic fertilizer thus prepared was poured in to the foot of the vegetable plant. While pouring this fertilizer in the pits of the vegetables care was taken for not to touch the fertilizer on the foot of the plants.

Besides this organic fertilizer prepared by the students, some more items of organic-fertilizers which were available in organic farming shops were also supplied to the vegetables.

#### **h. Preparation and Application of Organic Pesticides**

In order to protect the plants from different kinds of insects, organic insecticides were also prepared by the students with the advice of organic farming experts. The main such organic insecticide prepared was "tobacco decoction". For preparing this organic pesticide tobacco cut into small pieces was put into water for one day. After one day tobacco pieces were squeezed out and the tobacco sediment was removed from the solution. Then soap solution was added to the tobacco solution and the mixture was stirred well and was filtered. This solution was kept in a big vessel. At the time of applying to the vegetables, required amount of the solution was poured into another

convenient vessel and diluted by adding ten times of water into it.

In addition to the tobacco treatment a few more organic pesticides available in the pesticide shops were also made use of. (Eg: neem oil-garlic liquid)

Nearly after one month the vegetables like pulses and koval started yielding. Reaping was done when it become matured. It continued for about four months. Within three months cauliflour was ready for reaping. Other vegetables were also yielded and started harvesting nearly after 6 weeks of cultivation. All the vegetables collected through harvesting were sold to the students, teachers and community members.

#### **Evaluation of the Project Results**

In order to assess the attitude of B.Ed. trainees before and after the implementation of the project, Pre-test and Post-test was administered among the students. The same tool, a five point rating scale, was administered for both the purpose.

The tool thus administered was developed in the college as a part of the preparatory activities. The tool consisted of twenty two items. All these items were rated on a 5 point scale.

The maximum scores that can be attained by a student was  $22 \times 5 = 110$  and the minimum was  $22 \times 1 = 22$ , since the scores to responses were arranged as 5/4/3/2/1. Of the 22 items 11 were regarding the attitude of students on Organic Farming and the remaining 11 were regarding the knowledge of them for doing Organic Farming.

Using the scores obtained for the items related to attitude towards Organic

Farming, the mean and standard deviation were calculated separately for the pre-test and post-test. Then it was tested whether there exist significant difference between the

means of pre-test and post-test scores using t-test.

The values obtained are given Table 1.

**Table 1**

**Mean, standard deviation and t value of the pre-test and post-test scores related to attitude of B.Ed students in Organic Farming.**

Variable	Group	Number	Mean	Standard deviation	C.R	Remark
Attitude towards Organic Farming	Pre-test	100	16.42	4.27	16.98	The different is significant at 0.01 level
	Post-test	100	31.76	7.96		

The table values show that the mean of scores of Pre-test is 16.42 and that of post-test is 31.76. It shows that the mean value of scores obtained for attitude towards Organic Farming of B.Ed. students have become better than at the beginning of the project. The value of the final test 31.76 shows that the students possess a favourable attitude towards Organic Farming at the end of the project.

To test whether the difference in means is significant or not, "t" value was

calculated. As the t value obtained (16.98) is greater than the table value 2.58 it is understood that the difference is significant at 0.01 level.

As done in the case of attitude scores, the mean and standard deviation of scores obtained related to knowledge of B.Ed. students in Organic Farming was calculated separately for pre-test and post test. Then t-value was also calculated. The values are presented in Table 2.

**Table 2.**

**Mean, standard deviation and t value of the pre-test and post-test scores related to knowledge of B.Ed students in Organic Farming.**

Variable	Group	Number	Mean	Standard deviation	C.R	Remark
Knowledge in Organic Farming	Pre-test	100	20.76	6.39	13.69	Significant at 0.01 level
	Post-test	100	36.84	9.86		

The table values show that mean value related to knowledge in Organic Farming

of B.Ed. students in Pre-test is 20.76 and that of Post-test is 36.84 respectively. The

corresponding standard deviations are 6.39 and 9.86 respectively. From the mean value it is clear that post-test mean score is higher than that of pre-test mean score. It shows that the knowledge of B.Ed students in Organic Farming has increased. The high mean value (36.84) shows that the students possess adequate knowledge in Organic Farming at the end of the project.

In order to test whether the difference is significant or not, the t-value was also calculated. As the t-value calculated (13.69) is higher than the table value 2.58 at 0.01 level, it is revealed that there exists significant difference between mean scores of pre-test and post-test. It means that the project has made significant improvement in the knowledge of B.Ed. students in Organic Farming.

The improvement in the skill of B.Ed. students for doing Organic Farming was assessed by observing their performance. Their performance in various activities related Organic Farming was continuously assessed by a team consisted of teachers and community members who are deeply involved in Organic Farming. In the opinion of this assessment team, the skill of students in involving Organic Farming has improved very much as a result of their participation in the project. They have also remarked that big majority of the students possess adequate skill in doing Organic Farming.

### Results

Through the execution of the project much improvement was made among the B.Ed. trainees with respect to their:

- ◆ Attitude towards Organic Farming;

- ◆ Skills in doing cultivation by the method of Organic Farming; and

- ◆ Knowledge in doing Organic Farming

The improvement of students in attitude was assessed through the results of pre-test and post-test. Their improvement in knowledge for doing Organic Farming was also assessed through the scores obtained by the students at their pre-test and post-test. The improvement of the students in their skill for engaging in Organic Farming was mainly assessed through the assessment of their performance by an assessment team.

### Conclusions and Consequences

Our project in Organic Farming was an effective one. It contributed various positive aspects. The target group of the project was 100 B.Ed. first year students. In this project all the students participated actively.

Through the implementation of the project we have achieved the pre-determined objectives. Those achievements are summarised:

1. The first objective of the project was to develop a favourable attitude among B.Ed. student towards Organic Farming. In order to assess the attitude of B.Ed. students towards Organic Farming at the end of the project, a post- test was conducted. The mean value obtained for this test was 31.76 and the maximum score was 55. This high mean value shows that at the end of the project the students have attained a favorable attitude towards Organic Farming. At the same time the mean value obtained at the pre-test was only 16.42. So it is concluded that the change in attitude is due to the involvement in the project.



In order to test whether the difference in the mean scores of attitude is significant or not, the t-value was also calculated. The t-value obtained is 16.98. This shows that the attitudinal change is significant also. All these facts show that the project has attained the objective of developing favorable attitude among B.Ed. trainees towards Organic Farming.

2. Another objective of the project was to develop adequate knowledge in Organic Farming among B.Ed. students. As done in the case of assessing attitudinal change, the knowledge level of B.Ed. students in Organic Farming was also assessed at the end of the project. In the assessment it was found that the average score of students in knowledge was 36.84 out of 55 scores. This high mean value shows that at the end of the project students have attained a good level of knowledge in Organic Farming.

Comparison of the mean scores of pre-test and post-test was done by applying the statistical technique, t-test. As the mean score obtained for the post-test is 36.84 and that for pre-test is 20.76, the difference in means or increase in the means is 16.08. To test whether, this difference is significant or not, the t-value was calculated and found that the difference is significant.

From the above mentioned facts it is clear that the B.Ed. students have attained the objective of 'adequate knowledge in Organic Farming' as a result of the project.

- 3 From the opinion of teachers and other community members who are experts in Organic Farming and were selected as

the members of our skill assessment team it was understood that the students have achieved sufficient skill in Organic Farming. It was done by assessing the performance of the students.

4. The opinion of the students revealed that they are equipped well and willing to utilize their ASK in Organic Farming attained through the involvement in the project in their future. That is they are able to utilize their ASK in Organic Farming when they become teachers in the future.
5. Besides the targeted objectives, the students obtained many other advantages also. They are summarized here:
  - ◆ The participation and involvement in the project provided the students good opportunities for engaging in co-operative activities.
  - ◆ It helped not only the students but also the institution as a whole for having good community involvement.
  - ◆ Students got opportunities for understanding various activities carried out by Agricultural Offices.
  - ◆ Another important advantage they acquired is regarding the values. Their concept about the "dignity of labour" became more concrete and favourable.
  - ◆ As a result of involvement in Organic Farming, the B.Ed. students got a handson experience regarding the difficulties faced by the farmers. Their respect for farmers and agriculture is improved very much.

### Plan for Future Action

Organic Farming system can be implemented in all Colleges of Education and all other Teacher Training Institutions. That will help to equip at present all the teacher trainees to develop favourable attitude towards Organic Farming, and adequate knowledge in Organic Farming. The good and valuable learning experiences they obtain as a result of engaging in various activities related to the Organic Farming during their pre-service Teacher Education Programme will enable them for applying practically ASK in Organic Farming among their students when they became teachers in future. So it is suggested to develop a plan of action by each college of teacher education for doing Organic Farming in their college premises.

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