

## Effect of Integrative Teaching Approach on Senior Secondary School Students Attitude towards Mathematics in Ijebu ode Local Government of Ogun State

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### Abstract

*In this paper the effectiveness of integrative teaching method on senior secondary school students' attitude towards where examined. The sample was made up of eighty (80) SS2 students selected from two intact classes from different schools, where one served as experimental group and the other control group. Mathematics Attitude Scale was used to collect data on the attitude of the students alongside the treatment package for the experimental group and conventional approach for the control group. Data collected were analyzed using ANCOVA and results showed that integrative teaching method had significant effect on the attitude of students towards mathematics in the senior secondary school while gender and the interaction effect between gender and treatment had no significant effect on the attitude of students towards mathematics. It is concluded that the treatment is of main significant to the positive attitude of students towards Mathematics, therefore it is recommended among others that teachers and other stake holders should ensure the appropriate use of integrative teaching approach to bring about positive attitude of students towards Mathematics.*

**Keywords:** Integrative teaching strategy, attitude, Mathematics, conventional approach, Students

### Introduction

Learning is a lifelong process of transforming information and experience into knowledge, skills, behaviour and attitudes. It is a mechanism through which the society generates the knowledge and skills required for its survival and sustenance (Kazeem & Ige, 2010). Mathematics is a branch of information that manages estimations, numbers and amounts. For understudies to move ahead in their coveted scholarly vocation, they must pass the subject legitimately with no less than a credit, Wachikwu, Kevwe, Eseose & Nwaukwu (2017). Also, Gal (2014) emphasized that some contributing factors to students' lack of mathematics achievement are poor study habit and attitude towards the subject which is as a result of fear and the general impression created by the society, who believe that mathematics is difficult to comprehend. Ogunfowote&Asanre (2019) opined that to facilitate the process of knowledge transmission, teacher's needs to apply appropriate teaching methods that is suitable for a

specific objective and outcomes. Today, questions about the effectiveness of teaching methods on students learning have consistently raised considerable interest in the thematic field of educational research Hightower (2011) research on teaching and learning constantly endeavour to examine the extent to which different teaching methods enhance growth in student learning.

The present practice of mechanically applying the same methods to dull, average as well as the bright students could be responsible for much of the ineffectiveness of instruction given in schools. Furthermore, Overmayer (2010) reported that the challenge of covering the entire mathematics syllabus in classroom while accommodating the needs of struggling students creates an almost impossible situation for the teacher to pass across the required attribute to the students. Consequently, many students move through the mathematical curriculum with deficiencies. Students stumble through the mathematics curriculum with these gaps in learning, gaps that seem to grow exponentially, until finally, frustrated by continuous failure bringing about attitudinal change towards the learning of mathematics which then leads to many students dropping out of school. Hence, each student learns best using strategies and objectives that reflect his experiences, abilities and attitude. Despite the recognition accorded to mathematics due to its relevance, Elekwa (2010) remarked that students exhibit non-chalant attitude towards mathematics, even when they know that they need it to forge ahead in their studies and in life. Such students who have already conditioned their minds that mathematics is a difficult subject are usually not serious in the learning of mathematics and therefore perform poorly in mathematics tests and examination. Asanre *et al.*, (2019) reported that students' attitude towards Mathematics are measured based on their academic achievement, that those whose achievement are low lack positive attitude towards the subject. Over the years, there has been a loud cry by researchers that the academic achievement of secondary school students in mathematics as drastically reduced.

Omole (2019) reported that gender differences in learning mathematics cannot be explained in a simplified manner because there is multiplicity of forces and environments that operate apart from gender which influences a child's learning of mathematics Gender differences in mathematics may vary due to socioeconomic status and ethnicity, school environment, the mind-set of the teacher towards the learners. Omole further reported that middle school and high school girls have positive attitudes toward school but negative attitudes toward the learning of mathematics, it is also noticed that girls' positive attitudes towards mathematics decline as they grow older.

Education cannot be of quality without effective teaching. The instructional method employed by teachers plays an important role in the acquisition of instructional contents for meaningful learning and development of necessary skills. Teacher-centered instructional methods make students passive with less interaction, Asanre *et al.*, (2018). An integrated approach allows learners to explore, gather, process, refine and present information about the topics they want to investigate without the constraints imposed by traditional subject barriers. It also allows students to engage in purposeful, relevant learning and encourages students to see the interconnectedness and interrelationships between the curriculum areas, (Ogunfowote & Asanre, 2019). Based on the above it is important to explore the effect of

integrative teaching approach on senior secondary school students' attitude towards mathematics.

### **Purpose of the Study**

The purpose of this study was to examine the effect of integrative teaching approach on senior secondary school students' attitude towards Mathematics, specifically the study examined:

1. The effect of integrative teaching approach on students' attitude toward Mathematics in secondary school.
2. The effects of gender on students' attitude toward Mathematics in secondary school.
3. The interaction effect of integrative teaching approach and gender on students' attitude toward Mathematics in secondary school.

### **Hypotheses**

**H<sub>01</sub>:** There is no significant effect of integrative teaching approach on students' attitude toward Mathematics in secondary school.

**H<sub>02</sub>:** There is no significant effect of gender on students' attitude toward Mathematics.

**H<sub>03</sub>:** There is no significant interaction effect of integrative teaching approach and gender on students' attitude toward Mathematics in secondary school.

### **Methods**

This paper adopted a Pre – test, Post – test and Control group quasi experimental design for the study. This design and method is considered appropriate because it takes care of any form of biases and students' opinions are recorded at different stages of the study. The data for the study were collected through the use of Mathematics Attitude Test (MAT) adapted from the work of Fennema-Sherman Mathematics attitude scale (2010) which revalidated and the reliability was done. First section of the instrument consists of the student's bio–data, while the second part consists of the items on the attitude of students towards mathematics. The instrument was revalidated by the senior colleague in the department of mathematics, Tai Solarin University of Education as well as mathematics teachers in secondary schools for face and content validity. The reliability of the instrument was ascertained by using split half method and the reliability co–efficient of 0.82 were obtained. The population of the study comprised of 80 junior secondary school students in ijebu ode local government area of Ogun State, Nigeria, selected from two 2junior secondary schools by purposive sampling. From each school intact class of 40 students' was selected using simple random sampling. One of the schools served as the experimental group while the other serve as the control group. Both groups were given a pre-test before the introduction of the teaching strategy in the experimental group while conventional approach was used in the control group. Data obtained were analyzed using Analysis of Covariance.



**Results**

**Table 1:** One way analysis of Covariate (ANCOVA) of students’ attitude toward mathematics scores on treatment, gender and interaction.

Source	Type III sum of squares	Df	Mean square	F	Sig.
Corrected Model	14.123	4	3.531	.461	.763
Intercept	1537.788	1	1537.788	200.998	.000
Covariate	6.445	1	6.445	.842	.356
Strategy	.854	1	.854	.112	.020
Gender	3.278	1	3.278	.428	.517
2Strategy * Gender	2.798	1	2.798	.366	.549
Error	267.777	75	7.651		
Total	18656.000	80			
Corrected Total	281.900	79			

R-Squared = .378 (Adjusted R Squared =.229)

The ANCOVA table revealed that the effect of integrative teaching Method on the attitude of students towards Mathematics at .05 level of significant of the F- value of .112 for treatment is significant at .02 which is less than .05 alpha level and thus the null hypothesis was rejected. The researchers conclude that there is significant main effect of integrative teaching approach on students’ attitude toward Mathematics in secondary school. This implies that there is a significant difference between the mean attitude scores of students taught using integrative teaching Method as instructional guide and those taught using the conventional method as an instructional guide.

**Hypothesis Two:** There is no significant main effect of gender on students’ attitude toward Mathematics.

From **table 1**, the F- value of 0.428 for gender difference is not significant at .517 which is greater than .05 alpha levels and thus the null hypothesis was accepted. Thus there is no significant main effect of gender on students’ attitude toward Mathematics.

**Hypothesis Three:** There is no significant interaction effect of integrative teaching method 2and gender on students’ attitude toward mathematics in secondary school.

From **Table 1**, the F- value of .366 values for treatment and gender difference interaction is significant at 0.549 which is greater than .05 alpha levels and thus the null hypothesis was accepted and we then conclude that there is no significant interaction effect of integrative teaching approach and gender on students’ attitude toward mathematics in secondary school.

**Conclusion**

The following conclusion were drawn based on the findings of this study that integrative teaching approach has effect on the students’ attitude towards mathematics in secondary school level that is the strategy improved the academic attitude of the learners. It is also concluded that there is no interaction effect of treatment and gender on the Attitude of

students towards mathematics in the senior secondary schools in Ijebu ode local government area of Ogun State, Nigeria.

### Recommendations

The following recommendations were made based on the finding from the study:

1. Teachers should ensure the use integrative teaching approach as alternate method in the process of teaching and learning of Mathematics at secondary level (especially junior sections) of education in order to encourage the students towards having positive attitude towards Mathematics.
2. Educational Ministries and all stakeholders should step-up both learner's and teachers' supervision to curb laziness and sluggishness on the part of teachers and learners to ensure proper usage of the integrative instructional strategy in schools.

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