

Impact of attitude and information

[Life](#), [Emotions](#)



This survey investigated the effects of pupils' attitude, instruction and learning methodological analysis on accomplishment in mathematical geometric building. The survey was carried out as a consequence of uninterrupted hapless public presentation in geometric building in Senior Secondary Schools, a 3 twelvemonth progressive educational plan in Nigeria. A purpose sample comprised of 35 Male and 27 Female pupils from two integral categories of different private secondary schools in the Lagos Mainland Local Government Area of Lagos State was used for the survey. A 28 (28) - point questionnaire titled, `` Survey of Attitude to Mathematics'' (SAM) , to happen out the pupils' attitude to mathematics by and large and geometric building in peculiar, and A 3- point word- job type, teacher made Mathematics Achievement Test in Geometric Construction (MATGC) instruments were used to carry on the survey.

An experimental group was taught utilizing computing machine and based on constructivist theory of learning for a period of 12 contact hours over a period of 4 hebdomads. The responses of the questionnaires were subjected to descriptive analyses while the MATGC tons were subjected to t-test, Pearson correlativity coefficient and arrested development analysis. Consequences revealed that attitude appeared to play a minimum function in accomplishment of geometric building in mathematics. In malice of divergent earlier findings on impact of instructional methodological analysis on accomplishment and attitude, this survey revealed the constructivist attack as a better attack in learning as it had a positive impact on accomplishment and attitude towards the subject. The survey farther revealed that male pupils performed better than female pupils. Deduction of

all these findings calls for reappraisal of mathematics curriculum by inclusion of Assisted Delivery Method in learning geometric building in schools. A farther survey is recommended for rural and public school scenes as against the urban and private school scenes. It is besides recommended that an ADM attack be applied to other countries of mathematics where pupils perform ill.

Introduction

Education, such a critical force and major participant in a state 's economic system, liberates the head and opens up broad chance to whoever acquires it. An educated people can utilize available technological developments to his/her advantage. Today the power of a state is determined non by its portion size of economic wealth but by its technological art. `` The distinction, safety, and wellbeing of states have been entwined for centuries with the ability of their people to cover with sophisticated quantitative thoughts. Leading societies have commanded strong mathematical accomplishments to maintain them on the taking border in scientific discipline, medical specialty, and engineering (National Mathematics Advisory Panel. Foundations for Success, 2008) .

Despite the fact that some people do n't hold much preference for mathematics and see it as an highly hard topic, it is a necessity in all aspects of society. Two chief grounds for troubles of larning mathematics are the abstract construction of mathematics and instructors ' attempts to do pupils memorise the capable alternatively of assisting them internalise mathematical cognition (Summers, 2006) . In add-on, math learning

methods may hold a positive impact on pupils' apprehension and public presentation in this capable country.

InformationCommunicationTechnology(ICT) an country that has pervaded every aspect of human life with the command of computing machine applications giving a competitory border to persons in the school every bit good as occupation markets. ICT can be used to leverage instructional methods in the schools. Harmonizing to Chung (2004) who noted that methods of learning mathematics are founded upon and straight affected by the pedagogue 's probes of lyarning. Teachers must look into and utilize best instruction patterns to impact pupil larning. Computer-based instructions will no uncertainty be a utile method to present mathematical constructs most particularly those viewed as hard subjects.

Performance is a map of attitude and ability. To get accomplishments, be it cognitive, affectional or otherwise one must be mentally and emotionally prepared. A incorrect attitude could turn a superb pupil who is capable of doing As into an mean pupils who achieves merely Bs and Cs.

Despite the fact that mathematics is a nucleus capable taught at both the Junior and Senior Secondary degrees of Education in Nigeria, pupils continue to execute ill in this topic (NPE, 2004) ; a topic described as the 'queen of the scientific disciplines ' by the celebrated German mathematician Carl Friedrich Gauss.

The Chief Examiners ' studies (Nigeria) of the West African Senior School Certificate Examination all said that pupil 's public presentation in

mathematics continues to be hapless, but laid accent on geometric building as one of the countries where pupils performed ill .

- Reasons for this amongst others were attributed to:
- Poor appreciation of the inside informations needed for replying inquiries
- Insufficient borings and tutorials from instructors and
- deficiency of sufficient single assignments and undertaking
- The suggestions made for betterment were:
- Students should organize survey groups and exchange thoughts
- Students ' cognition of the basicss of English Language should be improved
- More drills and tutorials should be given by instructors.
- Sufficient single assignment and undertaking should be used to prosecute pupils.

The issues raised above and the fact that good cognition of geometric buildings (The mathematics of the belongings, measuring, and relationships of points, lines, angles, surfaces, and solids) are of import foundations for pupils who will wish to foster their instruction in such countries as mathematics, technology, natural philosophies and other subjects under Science and Technology(S & A ; T) - an country of Education the Federal Government of Nigeria is passionate about its function in national development. These are what necessitated this survey.

Purpose of the survey

The intent of this survey was to:

Investigate possible differences between the impact of traditional method of learning geometric building and the aided find method

Show the importance of appropriate methodological analysis in teaching/learning, particularly in Mathematics.

Look for any relationships between public presentation and instructional methods

Investigate whether attitude and methodological analysis impact pupils ' public presentation in mathematical geometric building

Suggest ways that can be used, to guarantee betterment in instruction of geometric building in mathematics.

Methodology

Department of energies attitude play a function in accomplishment in geometric building in mathematics?

What are the impacts of the traditional method of instruction and the aided find method on pupils ' accomplishment in mathematics geometric building?

Does Gender hold any function in accomplishment in geometric building in mathematics?

Students ' attitude will non significantly affect their accomplishment in geometric

There is no statistically important difference between public presentation of computing machine and chalkboard groups

There is no statistically important difference between male and female pupils in the combined dependant variables that make up the acquisition results

Design of the Study

This survey made usage of both study and experimental designs, get downing with a study to find pupils ' attitude to mathematics by and large and geometric building in peculiar, followed by four hebdomads tutorials to two integral categories

The population of the survey comprised the SS2 Students in Private Secondary Schools in Lagos State. (Since Mathematics is compulsory)

Sample and Sampling Techniques

The sample size comprised of 62 pupils was used for the survey. These pupils were drawn from two indiscriminately selected Private Secondary Schools from a Local Government Area of Lagos State, one of the 36 provinces doing up Nigeria. The pupils were selected from integral SS2 categories in the schools comprising of 35 male and 27 female. There were 33 pupils from Science integral categories of one school and 29 pupils from Social Science integral categories (Commercial) of another school. The SS2 pupils in these schools had a pretest. The pretest books were graded out of 30marks. The average mark for a Social Science category was 9. 45 while for the scientific discipline category it was 11. 18. These agencies were used as benchmarks to sort the pupils into More Knowing Others (MKO) and Less Knowledgeable Others (LKO) . Any pupils hiting above the mean were classified as MKO while pupil hiting below the mean was classified as LKO.

The scientific discipline category and societal scientific discipline categories were assigned as experimental and control group severally. The ground for this was that the schools where the scientific discipline sample was drawn had all the installations needed for computer-based instruction, such resources as computing machines, internet entree, changeless power supply, and a contributing research lab. Students could utilize the bundle at their free periods which afforded them the chance to make single farther work.

The MKO and LKO were indiscriminately mixed in the category to accomplish a collaborative acquisition consequence ; the purpose of this randomisation was to neutralize all immaterial variables such as sex, personality, age, race, parents ' educational position, hapless nutrition, etc. that may impact the findings of this research work. However such step ining variables as fixed mathematics course of study, clip available after categories, decrease in attending and assimilation which may be due to tire after normal school hours could non be controlled.

Research Instruments

The research instruments used were:

Twenty-eight point questionnaire titled `` Survey of Attitude to Mathematicss '' (SAM) to happen out pupils ' attitude toward mathematics by and large and geometric building in peculiar. And

A three-item word-problem type, teacher made Mathematics Achievement Test in Geometric Construction (MATGC) was administered as a pre trial to command and experimental group for classification of the MKO and LKO. The

same trial was administered to both the control and experimental group as a station trial. The MATGC was drawn from past West African Examination Council (WAEC) , Secondary School Certificate Examination (SSCE) inquiries (1998-2008) . The pick of WAEC, SSCE inquiries was based on the fact that they are standardised trial inquiries which had already undergone cogency and dependability trials by WAEC. It is besides the scrutiny the pupils will take at the completion of their Senior Secondary Education.

Method of Data Collection

The pupils were divided into two groups, a control and experimental group. The SAM was administered to both groups by the research worker with the aid of the mathematics instructors of the categories used. The pupils were encouraged to reply all inquiries in the questionnaire while the benefits that will accrue from the research were clearly explained to them. Deduction of non replying all inquiries in the questionnaire was besides explained to them. The Students were given codifications alternatively of utilizing their names to conceal their individuality in order to promote them to take part in the research. These codifications were written on the single Survey of Attitude to Mathematics (SAM) .

Method of informations aggregation for the MATGC:

The three-item trials were administered to the experimental and control group with the aid of their category instructors. The engagement of the instructor was necessary if the pupil will take the research earnestly and for meaningful informations aggregation. The same designation codification used for the SAM by an single pupil was used for the MATGC. This enabled

the research worker to fit the documents of the pupils together. The pretest books were graded out of 30 Marks utilizing a marker user which was developed and used for rating the trial. The tests were analyzed in order to place the More Knowing Others (MKO) and Less Knowledgeable Others (LKO) in the experimental group. A mark above the experimental group category mean (Mean= 7.58) qualified a pupil for MKO class while a mark less than the average qualifies a pupil for LKO. The MKO and LKO were made to sit alternately in their several categories to accomplish the collaborative acquisition consequence ; the purpose of this randomisation was to neutralize all immaterial variables such as sex, personality, age, race, parents ' educational position, hapless nutrition etc that may impact the findings of this research work. However, such intervening variables as fixed mathematics course of study, clip available after categories, decrease in attending and assimilation which may be due to tire after normal school hours could not be controlled. The two groups of pupils (i. e. the experimental and command groups) were now taken through a four hebdomads learning of one hr per twenty-four hours for every other twenty-four hours (i. e. Mondays, Midweeks and Fridays) .

Class were conducted after the stopping point of the regular categories, which was designed to take attention of non interrupting the normal mathematics categories and setting those taking portion in the experiment at a disadvantage. The research worker took the experimental groups while the controlled groups were taken by their single mathematics instructor who had been before taught how to utilize the lesson program drawn up by the research worker. The entire figure of contact period came to three hours a

hebdomad and a sum of 12 hours for the full period of learning. Consent from school authorization and parents had been antecedently sought. Students in the experimental group were taught utilizing the ADM method, a collaborative-based group learning utilizing the computing machine. The ADM was an cyberspace based geometric building tutorial developed by John Page on hypertext transfer protocol: [//www. mathopenref. com/](http://www.mathopenref.com/) . The pick of this bundle is the simpleness with which it taught geometric building, utilizing lifes and graphical illustration. Students of the experimental group have entree to computing machines and to the bundle at school during their free periods or if they have internet entree at place thereby larning further on their ain. The bundle is synergistic, provides good visual image for the pupils, it is free for all users, intriguing and captivates the pupils ' involvement. It hence provides good apprehension for pupils. Students were now required to execute buildings affecting angle 750, 1500, 1050 angles. Any angle which are non basic have to undergo some uses such as add-on or minus. This was the major jobs the pupils faced. At this point they were allowed to join forces in add-on the MKO were to help the LKO to acquire to a point they could use the construct and build the assorted angles on their ain. The control groups who were taught by their several instructors were taught utilizing the chalkboard, chalkboard compass, and swayer as a medium of direction. They were taught how to build basic angles, , how to bisect angles, buildings affecting angle 750, 1500, 1050, i. e angle which have to undergo some uses such as add-on or minus. No coaction was allowed in this group. Drills and assignments were given to both the experimental and control

groups at the terminal of each contact period, while two group undertakings were given to both groups after the terminal of the contact periods.

The SAM and the MATGC were now administered to the control and experimental group as station intervention. The responses to SAM and the trial documents were collected, scored and analyzed.

Method of Data Analysis

All informations gathered were organized and analyzed utilizing the undermentioned stairss.

The responses from the pre and station SAM were placed against the four-point Likert Scaling, Strongly Agree (SA= 4) , Agree (A= 3) , Strongly Disagree (SD= 2) and Disagree (D= 1) for positive statements while the points were reversed for negative statements i. e. (SA= 1) , (A= 2) , (SD= 3) (D= 4) . Descriptive analyses was used for the SAM. There were no uncomplete responses to any questionnaire since the filing of the questionnaire was closely monitored by the research worker to guarantee all inquiries were answered by pupils.

The MATGC was scored out of 30 Markss utilizing a marking strategy. The pre and station tonss from MATGC were subjected to Pearson Correlation coefficient analysis for variables that can be ranked and ordered, e. g public presentation and attitude, while t-test statistics was used for variables with no order such as relationship between attitude and instructional method while relationships amongst multiple variables such as attitude, public presentation and methodological analysis were subjected to multivariate

analysis of discrepancy (MANOVA) . Arrested development analysis was besides used to happen out the part of each of the independent variables to the dependent variables. All hypotheses were tested at 0. 05 degree of significance.

Findings

In this research, three research inquiries and four hypotheses were posed. The consequences of the pre-test and post-test of MATGC were analyzed utilizing agencies, standard divergence (S. D) , t-test statistics. All hypotheses were tested at 0. 05 degree of significance. A p- value (deliberate value) & It ; than 0. 05 leads to rejection of the void hypothesis, otherwise it is accepted.

HYPOTHESIS I- Students ' Attitude will non significantly affect their accomplishment in geometric building

From Table 1a above, the Pearson-correlation coefficient between accomplishment mark and the attitudinal mark before intervention was positive but weak ($r = .038$) . The p-value which is the important value of correlativity between the two variables (pre- accomplishment mark and pre-attitudinal mark) is $r = 0.684$ which was greater than 0. 05 demoing that the correlativity was non important before intervention.

From Table 1b shows the Pearson-correlation coefficient between accomplishment mark and the attitudinal mark after intervention ($r = .005$) , which was positive but weaker than earlier intervention, while the p-value which is the important value of correlativity between the two variables (post

accomplishment mark and station attitudinal mark) was $p = 0.955$. The values showed a farther weakening of the relationship between attitude and public presentation. Since this is greater than 0.05 i. e. $P > 0.05$, it follows that the correlativity was non important.

Therefore there was no important relationship between the station accomplishment mark and station attitudinal mark. The attitude of pupils hence did non significantly affect their accomplishment in geometric building.

The pre-test as shown in table 1a above, the mean of the experimental group (= 8.58) is higher than that of the control group (= 6.17) . The p -value which is the important value shows that the difference is non important ($p > 0.05$) . The hypothesis is hence upheld for the pretest.

Table 2b presents the post-test tonss and the t-test analysis which showed that the experimental group maintained the lead with a mean of 11.18 over the control group with a mean of 9.45. The t-test analysis shows that the important value of 0.355 is besides greater than 0.05. Again, the hypothesis is upheld in the station trial tonss.

In drumhead, from the tabular arraies 2a and 2b above, the experimental group (computing machine group) performed better in both the pre and station trials than the control group as evidenced by the agencies ; but the difference in the average public presentations of the two groups is non important. It so follows that the impact of the computing machine assisted direction is non noticeable.

There is no statistically important difference between male and female pupils in the combined dependant variables that make up the acquisition results

Note: The variables that make up the acquisition outcomes in this survey are Students ' accomplishment (tonss) in geometric building scrutiny.

Students ' attitude to geometric building.

A one-way between groups Multivariate Analysis of Variance (MANOVA) was performed to look into sex differences in larning results (accomplishment and attitudes) . Two dependent variables (Achievement in geometric building scrutiny and attitude to geometric building) were involved. The independent variable was gender.

There was a statistically important difference between males and females on the combined dependant variable: $F (2, 58) = 3.763, P = 0.029$; with $\lambda = 0.885$; Eta squared = 0.115. when the consequences for the dependent variables were considered individually utilizing 0.05 alpha degree of significance, the lone difference to make statistical significance was the accomplishment mark after intervention: $F (1, 59) = 6.713, P = 0.012$; Basque Homeland and Freedom squared = 0.102. An review of the average tonss indicated that males reported higher tonss (intend = 13.154, SD = 7.00) than females (average = 8.457, S. D = 7.01) .

There is no statistically important difference between computing machine and chalkboard groups in the combined dependant variables that make up the acquisition results.

Note: The variables that make up the acquisition outcomes in this survey are ;

Students ' accomplishment tons in geometric building scrutiny.

Students ' attitude to geometric building

A one-way between groups Multivariate Analysis of Variance (MANOVA) was performed to look into differences in learning result (achievement and attitudes) . Two dependent variables (Achievement in geometric building scrutiny and Attitude to geometric building) were involved. The independent variable was instructional methodological analysis. There was no statistically important difference between computing machine and chalkboard groups on the combined dependent variables: $F (2, 59) = 0. 591, p= 0. 557 ; Wilks ' \lambda = 0. 980, \text{Eta squared} = 0. 020$. When the consequences of the dependent variables were considered individually, none of the differences reached statistical significance. An review of the average tons indicated that the computing machine group performed better in both achievement tons in geometric building scrutiny and attitude to geometric building than the chalkboard group. Below are the agencies and standard divergences. The Hypothesis is hence upheld that there is no significance difference between the two groups in the combined dependent variables.

Discussion

The credence of this hypothesis provides replies to the research inquiry, `` Does Assisted Discovery Method of direction affect pupils ' accomplishment in geometric building positively '' . The hypothesis may non be important and

does not uphold Rosen's (2007) survey on "Different Learning Environments Provide Different Learning Experiences" where he stated that overall constructivist acquisition environments are more effective than traditional ones, but to the contrary to outlooks, traditional scenes did not differ from constructivist ones when traditionally-appropriate steps were used.

The consequences of this probe were able to reply some of the research inquiries: What are the impact of the ADM and traditional method of learning on pupils' accomplishment in mathematics geometric building? Harmonizing to hypothesis two, the mean and standard divergence of both the pre and station trial was not statistically important therefore there may not be any noticeable impact that instructional engineering had on public presentation of both the control and experimental group. The ADM attack nevertheless, harmonizing to hypothesis four revealed a better attack in footings of betterment in both accomplishment and attitude of the experimental group. There was merely a little impact in attitudinal alteration after the intercession from the experimental group. The ground for this could be attributed to the involvement pupils have in computer-based instruction as supported by earlier findings of (Salami 2008) that pupils taught mathematics with computing machine engineering achieved cognitively higher than those taught without computing machine engineering. Further research by Julia in (Salami 2008) stated "computing machine tutorials, developing through World Wide Web etc can be a rewarding utile experience for pupils".

The Impact Gender played in attitude and public presentation to geometric building survey revealed that male (average = 13. 154) as against female (mean= 8. 457) performed better in geometric building than females. This may be topic specific as there are surveys to demo that mathematic public presentation is non gender particular.

Decision

This research has been able to demo that both the traditional method of direction and the computing machine based method plays an of import function in learning and lyarning. The deduction for this is a demand to:

Students ' attitude is cardinal to lyarning and instructors should make all possible to instill in pupils the right attitude.

ADM attack should be applied to other countries of mathematics where pupils perform ill.

Deduction to Policy

Better on mathematics curriculum by seting more accent on usage of Instructional AIDSs in instruction and acquisition. The accent should be on the usage and non which specific one as from this survey the attitude of pupils to whether traditional or computer-based was non important, but the impact of instructional method was noticeable in public presentation.

More teacher preparation development plan in current instructional methodological analysis

Female pupils should be given more encouragement in larning mathematics.

A farther survey is recommended for rural and public school scenes as against the urban and private school scenes used for this survey.