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THE USE OF VISUAL BASIC AS AN ATTITUDINAL MODEL IN PRIMARY SCHOOLS' MATHEMATICS

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Abstract

The use of Visual Basic as an attitudinal model in primary school's Mathematics was conducted among primary school pupils in Oyo State. As a mixed method study of 50 basic five in Mathematics pupils were purposively drawn among all public and private primary schools in Oyo State, specifically in Ibadan North Local Government Area. Two research questions and hypotheses were raised and tested at 5% level of significance. Two instruments used for the study included Visual Basic and 22-items Pupils'Attitudes Towards Mathematics (PATM, r= 0.775). Data collections were analyzed through frequency counts, mean and standard deviation, Pearson Moment Correlation and t-test inferential statistics at 0.05 level of significance. Findings showed that there werepre and post mean attitudinal scores, but no gender mean attitudinal scores in Visual Basic Primary Schools' Mathematics. There was significant relationship between pre and post attitudinal scores in Visual Basic Primary Schools' Mathematicswith pearson moment correlation coefficient (ρ=1.0),thereby rejecting the null hypothesis. T-test inferential statistics of gender's mean attitudinal scores in Visual Basic Primary Schools' Mathematics showed crit-t = -2.0106, cal.t =-0.05, df =48, P >0 .05 level of significance), was not rejected. Conclusion, discussion and recommendations were made in the study.

Keywords: Visual Basic, Mathematics, Attitude, Primary School, Pupils

Introduction

One of the important subjects that help in the attainment of future academic career of students is Mathematics. Most courses in science and social sciences require the knowledge of Mathematics, which is a core subject from the primary through the junior secondary school levels of educational system. This important position occupied by the subject in the school curricular is bore out of the role of Mathematics in scientific and technological development, While Science is the bedrock that provides the spring board for the growth of Technology, Mathematics is the gate and key to the Sciences. Mathematics as an idea and abstract in nature, is also a universal language with particular kind of logical structure thatcontains body of knowledge relating to number and space with prescribed set of method for reaching conclusion about the physical world. In other words, Mathematics is the precursor and the queen, of Science and Technology, and indispensable in the nation building.

Historical frameworks in Mathematics

Since the introduction of formal education in Nigeria, Mathematics education has gone through several developments from the era of formal Arithmetic, Algebra, Geometry and the likes through the period of traditional Mathematics and the modern Mathematics controversy to the present everyday general Mathematics. Some of these changes have always been necessitated by the realization of the role which Mathematics should play in the nations Scientific and Technological development. Mathematics is the subject which often rewards the creator with strong sense of aesthetic satisfaction.Elementary Mathematics was part of the educational system in most ancient civilizations (Ancient Greece, Roman Empire, Vedic society and Ancient Egypt).

In most cases, a formal education was only available to male children with a sufficiently high status, wealth or caste. In Plato's division of the liberal arts into the trivium and quadrivium, the quadrivium included the mathematical fields of arithmetic and geometry. This structure was continued in the structure of classical education that was developed in Medieval Europe. Teaching of geometry was almost universally based on Euclid's Element. Apprentices to trades like masons, merchants, and money-lenders should expect to learn such practical Mathematics as was relevant to their profession. The first Mathematics textbook to be written in English and French language were Published by Robert Recorde, beginning with the Grounde of Artes in 1940.In the Renaissance the academic status of Mathematics declined, because it was strongly associated with trade and commercethough, it continued to be taught in Europe universities, yet it was seen as subservient to the study of Natural, Metaphysical and moral philosophy. However, researchers in Mathematics education are primarily concerned with the tools, methods and approaches that facilitate practice or study of practice. Mathematics educational research since the 19th century had shown that Mathematics as a subject had develop into an extensive field of study, with his own concept theories, methods, national and international organizations, conferences and literature. This trend was somewhat reversed in the seventeenth century with the University of Aberdeen creating a Mathematics chair in 1613, followed by the chair in Geometry being set up in Oxford University in 1619 and Lucasian chair of Mathematics established by the University of Cambridge in 1662. However, it was uncommon for Mathematics to be taught outside primary, secondary and tertiary institution. In the 18th and 19th centuries the industrial revolution led to an enormous increase in urban population when basic numeric skills, such as the ability to tell the time, count money and carry out simple arithmetic became essential in that new urban lifestyle. Within the new public educational systems, Mathematics became a central part of the curriculum from an early age. It was, however, saddened that pupils' interest comparatively to other subjects was not encouraging.

Visual Basic as an object-oriented programming language easily permits individuals to incorporate user-written functions into a speed-sheet. Asa computer language (High level language) designed by Microsoft company which is now the coreMacro language for all Microsoft's office products, including Microsoft word, different object-oriented programming language that has been in existence, is the simplest of all to perform any given operation. Visual Basic is a high-level language (human-language) which is user-friendly in nature. It helps in learning Mathematics easy and faster. According to (Oladayo, 2009) object-oriented programming language is an outgrowth of functional language. In object-oriented language, the code used to write the program and the data processed by the programme are grouped together into units called Objects. It has object-oriented programming language with its source from the Computed-Aided Instruction.

In the mid-1950s and early 1960s collaboration between educators at Stand Ford University in California and International Business Machines (IBM)Corporation introduced Computed Assisted Instruction (CAI) into selected elementary schools. Initially, CAI programmes were a linear presentation of information with drill and practice sessions. These early CAI systems were limited by the expense and the difficulty of obtaining, maintaining, and using the computers that were available at that time. Programmed Logic for Automatic Teaching Operations (PLATO) system, another early CAI system initiated at the University of Illinois in the early 1960s and developed by Control Data Corporation, was used for higher learning. It consisted of a mainframe computer that supported up to 1000 terminals for use by individual pupils. By 1985 over to 100 PLATO system were operating in the United States. From 1978 to 1985 also introduced a communication system between pupils that was forerunner of modern electronic mail (messages electronically passed from computer to computer).

The time-shared Interactive Computer Controlled Information Television (TICCIT) system was a CAI project developed by MITRE Corporation and Brigham Young University in Utah. With the advent of cheaper and more powerful Personal Computers in the 1980s, use of CAl increased dramatically. In 1980 only five percent of elementary schools and 20% of secondary schools in the United States had computers for assisting instruction. A recent development with far ranging implications for CAI is the vast expansion of the Internet, a consortium of interlinked computers. By connecting millions of computers worldwide, these networks enable pupils to access huge stores of information, which greatly enhances their comprehension ability.Mathematics as a practicable instruction since ages had made use of so many methods in its way of disseminating information, which include teacher centered methods, pupils-based methods, teacher pupils' method and other methods which include the using of audio, visual and audio-visual aids in the releasing of its own case study (Oladayo, 2009).

The present of visual elements in today's learning is increasing of images and visual presentations with text in textbooks, instructional manuals, classroom presentation and computer interfaces broadens. Although the educational community is embracing visual enhancements in instructions, the connection of visual and verbal information, is evidenced through history. According to Benson (2019) words are the image of things stressed further that without image, thinking is impossible and characters in alphabets began as picture with meaning. These symbols portray a man-made language with no distinction between words and pictures, just as musical notes convey the language of music. However, the modernization of this present era supports the concepts of visualizing school curriculum and instructions for better comprehension.

Recently history shows a reversal in this separation of teacher based learning and audio-visual learning which shows a great reliance on visually oriented approaches to information presentation. These facts and findings had led to a visualization movement in modern computing society whereby complex computations are presented graphically, allowing for deeper insights as well as heightened abilities to communicate concepts. Visualization helps make sense of data that may have seemed previously unintelligible. The proficiency of words and numbers is insufficient and must be supplemented with additional basic skills as new and emerging technologies permeate activities of daily living.Those who thought processes are predominantly in the right-hemisphere where visual-spatial and nonverbal component. Cognition activities rule frequently may have difficulty capitalizing on a learning style that is not compatible with their abilities. Instructional materials as well as teaching styles should be matched with cognitive styles for greater benefits. However, this research looks into how Visual Basic as an object-oriented language help in attitudinal solving some basic Mathematical problems.

Oladayo (2009) stated that Computer Aided Instruction had fuel the spirit of practicable thinking in Mathematics among primary schools' learner as it is diverting and rapidly expanding and learning process. It makes thinking ability to be fastened compared to when the learner is roved of Computer-Aided Instruction; and further explained that children are naturally excited and interested in Mathematics that, the first three years of school has always been a solid background for the learners because of the proper use of visual aids. Some of them may get disenchanted because of the unavailability of visual element in learning of Mathematics from primary four (4) to primary six (6) thereby returning their interest in Mathematics to zero point (level).

Subsequently, Mathematics has a practicable subject whose knowledge and its relevant in day-to-day activities, should be supported with current trend of information and communication technology through the use of Computer Aided Instruction otherwise calledComputer-Assisted Instrument. On these premises lie the use of Visual Basic as an attitudinal model in Primary Schools' Mathematics.

Historical frameworksin Visuals Basics and Students' Attitudes in Mathematics-As a result ofno classification index of research domains were provided in the proceedings of the joint meeting of PME-27 and PME NA-25 in Hada&Arcavi (2001), it was necessary to examine all of the Research Reports published that year, 19 of which (and two Short Orals) had titles suggesting visualization. Of these 19, nine turned out to be directly concerned with the topic Cohen; Nardi and Iannone; and three were indirectly related to it, the remaining seven mentioned visualization incidentally. In the 12 papers cited, visualization in mathematics education was investigated in the following areas: computer technology (Pratt & Davison, 2003; Schunk,2002); geometric solids (Campbell & Beaudry, 2005), notations and representation (Herman, 2004), use by mathematicians (Nisbet & Bain, 2000), theoretical development of models for cognition (Sinclair, 2003), metaphors (Maschietto & Bartolini, 2005), gestures (Radford, Bardini, Sabena, Diallo & Simbagoye, 2005), and finally, teaching and curriculum development (Owens, 2005). At PME-28 in Bergen, Nooriafshar (2007), the research domain index listed seven Research Reports (and no Short Orals) classified under the heading Imagery and Visualization. Three of the research studies reported (all conducted in Cyprus) addressed a family of topics involving the role of pictures and other representations in problem solving, the number line, fractions and decimals, with children in grades ranging from 1 to 6 (Elia & Philippou,2004: Gagatsis & Elia, 2004; Michaelidou, Gagatsis, &Pitta, 2004). The results of these studies stressed the need for multiple representations of fractions and decimals, and led to further theory construction in this content area. The Cyprus researchers, under the direction of Athanasios Gagatsis, have been prolific not only in their research output, but also in addressing the need for an overarching theory with regard to the role of visual representation in mathematics education. One other Research Report at PME-28 investigated fractions and developed theory (Herman.2004). The results of this study suggested that the process object duality of notation for a fraction result in images as a product that are problematic in the sense that they cannot easily be converted into images of the process required in addition of fractions. Their research suggested "the routes to seeing the fraction symbol as process and as object may be cognitively separate". This result led Herman (2004). to conclude that the difficulty experienced by students in their study "may just be because (in the domain of fractions at least) objects are not the encapsulation or reification of processes after all". This rather startling conclusion seems to call for further research, and if confirmed in related studies, may have implications both for the teaching of fraction concepts and processes, and also for avenues of further investigation of how use of imagery may facilitate or hinder reification. PME-29 in Melbourne, Australia in 2005 witnessed the consolidation of a trend that had been gaining momentum in the last few years, namely, Gesture and the construction of mathematical meaning, which was the title of a Research Forum organized by Arcavi & Hadas (2002).The recent trend of conducting systematic research on the use of gesture links these indicators to "the birth of new perceivable signs" The connection of gestures with semiotic theories, and with theories of embodiment, is further epitomized in the research (Thomas, 2003; Vermeer, Boekaerts & Seegers, 2000;Sabena, Radford & Bardini,2005). This development marks the genesis of a typology of kinds of gestures and their uses in mathematics education. The visual nature of this research endeavour is illustrated by the inclusion of photographic evidence in many research reports.

In some case, boys were more confident than girls even when their mathematics achievement test was the same to that of girls; and reported by Vermeer, Boekaetts, & Seegers(2000). had further shown that the gender differences in self-confidence were more marked for application problems than computation problems, with girls showing significantly lower confidence for application problems. Despite such consistent findings of girls' low confidence in mathematics, studies of classroom environment have shown that the girls' confidence in mathematics improved greatly in classes which actively involved girls in the learning of mathematics (Boaler, 2000).

Statement of the problem

Mathematics is an indispensable and essential subject that forms the basis ofother disciplines: in Science, Technology, Engineering and Mathematics (STEM) fields. It is the subject that is often perceived as challenging and intimidating, particularly by young learners in primary schools.In recent years, there have been growing concern about the declining performance of students in Mathematics, particularly at the primary school levels; andthis issue has led to various debates about the effectiveness of traditional teaching methods and the need for innovative approaches such as the use of Visual Basic to improve learner’s Mathematical literacy. Many of these innovative methods have not been fully indigenously used at the elementary level of the nation educational system, instead at the secondary school levels. Apart, most of these methods focused on achievement without considering the attitudes to which learners have towards topics in Mathematics, and the subject as a whole, necessitated the need to explore this teaching strategy as replica indigenous on one hand, and where primary school levels serve the foundation to the secondary levels necessitate the need to fill the vacuum in the use of Visual Basic as an attitudinal model in Primary Schools’ Mathematics,as indispensable.

Objectives of the Study

Study determined use of Visual Basic as an attitudinal model in Primary Schools’ Mathematics, as visual basic is an object-oriented programming language that have positive effect on learning process of Mathematics in primary schools. It would expose to the primary school teachers the needs of visual elements in the learning of Mathematics. Study would show the attitudinal model of learning of Mathematics with visualand hasten comprehension of the pupils'learning of Mathematics.

Research Questions

I. What are the pre and post mean attitudinal scores in Visual Basic Primary Schools' Mathematics?

II. What is the gender mean attitudinal scores in Visual Basic Primary Schools' Mathematics?

Hypotheses

Ho1: There is no significant difference or relationship between pre and post attitudinal scores in Visual Basic Primary Schools' Mathematics.

Ho2: There is no significant difference or relationship between gender mean attitudinal scores in Visual Basic Primary Schools' Mathematics.

Methodology

Research Design

The research design was a mixed method study where some pupils were exposed to the use Visual Basic of learningof some topics in Mathematics at the selected primary schools.

Population

The target population for the study comprised of primary schools' pupils of Ibadan North Local Government Area of Oyo State, Nigeria, aged-bracket (9-12) years old or simply basic five pupils.

Sample and Sampling Technique

The study focused on pupils of two public and private schools in Ibadan North Local Government Area of Oyo State, Nigeria, with precise fifty (50) basic Mathematics pupils who have spent five years of studying basic Mathematics.

Research Instruments

Two major instruments deployed for the study included Visual Basic and Pupils'Attitudes Towards Mathematics (PATM)-As a result of the available numbers of the Visual Basic the treatment group was assigned one instrument to five pupils during the school's hours of learning Mathematics with their teachers performing mere supervisory role in other not affect the smooth academic calendar of the schools, among others. Pupils'Attitudes Towards Mathematics (PATM)comprised of 20-items inFour-point Likert type was adapted and used for the study.

Validity of Instrument

The Visual Basic was trial tested on some pupils not within the local council areas to identify the problems the similar pupils of the selected pupils might encountered in the course of their use. Infact, these visual basic could as well be tagged 'improvised' which have been configured scope of the primary school Mathematics' topics at those levels.

Similarly,Pupils'Attitudes Towards Mathematics (PATM) was trial tested on some pupils not within the local council areas to identify the problems the similar pupils of the selected pupils might encountered in the course of their use.

Reliability of Research Instrument

In the course self-pilot study to the instruments of the study Visual Basic was Textron selected pupils over two weeks so as to determine the extent to which their general applications could fair for their designed-purposes. A reliability analysis of Visual Basic via Kuder Richardson 21-formula had value of 0.832 was obtained. On the Pupils'Attitudes Towards Mathematics (PATM) which was trial tested had Cronbach Alpha co-efficient reliability of 0.775.

Administration of the Research Instrument

Prior to the time of their administration researcher personally visited the participating schools, and solicited the assistants of their respective head teachers and those handling the primary five pupils of the mission of the study, in line with the contemporary topics within Mathematics curriculum. These teachers were well informed on the need to ensure that their pupils were grouped based on the available quantity of the visual basic to go round the selected pupils of one per five pupils to learn Mathematical topics within timeframe of seven weeks. The Visual Basic students were given Pupils'Attitudes Towards Mathematics (PATM) to complete at the end of using Visual Basic through their teachers.

Data Collection and Procedure

Prior to the data collection as the study, Visual Basic was introduced to pupils for some weeks of the school's calendar and thereafter given Pupils'Attitudes Towards Mathematics (PATM)to complete, retrieved through their teachers.

Result

RQ1: What are the pre and post mean attitudinal scores in Visual Basic Primary Schools' Mathematics?

Table 1: Pre- and Post-Pupils' Attitudes Towards Mathematics (PATM)

S/N	Statements of Visual Basic and Attitudes to learning Mathematics	4 = SA Pre Post	3 = A Pre Post	2 = D Pre Post	1 = SD Pre Post	Means Score Pre Post
1	Visual Basic leads pupil on belief "I can	24 27	17 12	02 00	07 11	3.16 3.10
2	Visual Basic leads pupils on belief. "I cannot"	13 12	17 16	13 19	07 03	2.72 2.74
3	Visual Basic teachers are not often friendly	15 12	12 09	10 04	13 25	2.58 2.16
4	Visual Basic is the most difficult aids in the school	13 06	13 04	20 16	04 24	2.70 1.84

5	Visual Basic makes pupil enjoys learning	22 15	04 02	02 10	22 14	2.52 2.36
6	Visual Basic is more likely to show pupil's interest in Mathematics	24 10	07 05	13 14	06 21	2.98 2.08
7	Visual Basic make pupils values Mathematics period	23 22	08 08	15 14	04 08	3.00 2.92
8.	Visual Basic make pupil puts effort toward learning Mathematics	17 08	06 09	03 01	24 32	2.32 1.86
9	Visual Basic makes pupil performs well in Mathematics	03 10	13 08	18 16	16 26	1.80 2.44
10.	Visual Basic makes pupil not enjoy learning in Mathematics	13 27	14 06	08 08	15 09	2.50 3.02
11	Visual Basic makes pupil Hasgreat value in learning Mathematics	20 10	17 10	12 11	01 19	3.12 2.22
12	Visual Basic stimulates one to accomplish success	10 20	10 17	11 12	19 01	2.22 3.12
13.	Visual Basic creates fear for one's learning	27 13	06 14	08 08	09 15	3.02 2.50
14	Visual Basic is not needed for one's grows in life	10 03	08 13	16 18	26 16	2.44 2.06
15	Visual Basic makes pupils not social	08 17	09 06	01 03	32 24	1.86 2.32
16.	Visual Basic makes pupil hasno energy into completing the task at hand	22 23	08 08	14 15	06 04	2.92 3.00
17	Visual Basic affords pupil's minimal work	10 24	05 07	14 13	21 06	2.08 2.98
18.	Visual Basic affords pupil to go above	15 22	02 04	19 02	14 22	2.36 2.52
19.	Visual Basic affords pupil to go behind end result	06 13	04 13	16 20	24 04	1.84 2.70
20.	Quality work in Visual Basicis affected by Classroomsurrounds	12 15	09 12	04 10	25 13	2.16 2.50
21.	Quality work in Visual	12	16	19	03	2.74

	Basic is affected by school Environment	13	17	13	17	2.92
22.	Quality work in Visual Basic is affected by pupil's Emotions	27 24	12 17	00 02	11 07	3.10 3.16
	Subtotal	346	217	238	319	2.57
	50= 4,170	346	217	238	323	2.58

Keys: Strongly Agreed=4, Agreed=3, Disagreed=2, Strongly Disagreed=1, (Pre)(Post)=(Pretest Response) (PosttestResponse), (Pretest Response Grand Mean) (Posttest Grand Mean) = (2.57) (2.58). Table 1 described Pre- and Post-Pupils' Attitudes Towards Mathematics (PATM) which showed diverse response to the attitudes under consideration using mean score of 2.5 as criterion referenced point.

RQ2: What is the gender mean attitudinal scores in Visual Basic Primary Schools' Mathematics?

Table 2: Gender's means scores of post-Pupils' Attitudes Towards Mathematics (PATM)

S/N	**Statements of Visual Basic and Attitudes to learning Mathematics Female**	**4 = SA Male Female**	**3 = A Male**	**2 = D Male Female**	**1 = SD Male Female**	**Mean score Male Female**
1	Visual Basic leads pupil on belief "I can	11 14	07 06	02 00	03 07	3.13 3.00
2	Visual Basic leads pupils on belief. "I cannot"	05 06	07 08	05 10	06 03	2.48 2.63
3	Visual Basic teachers are not often friendly	06 06	05 04	04 02	08 15	2.39 2.04
4	Visual Basic is the most difficult aids in the school	05 03	05 02	09 08	04 14	2.48 1.78
5	Visual Basic makes pupil enjoys learning	10 08	01 01	01 10	11 08	2.43 2.33
6	Visual Basic is more likely to show pupil's interest in Mathematics	11 05	03 02	05 07	04 13	2.78 1.96
7	Visual Basic make pupils values Mathematics period	10 11	03 04	06 07	04 05	2.83 2.78
8.	Visual Basic make pupil puts effort toward learning Mathematics	07 04	02 04	01 01	13 18	2.13 1.63

9	Visual Basic makes pupil performs well in Mathematics	01 05	05 04	08 08	09 10	1.91 2.15
10.	Visual Basic makes pupil not enjoy learning in Mathematics	05 14	06 03	03 04	09 06	2.30 2.93
11	Visual Basic makes pupil Hasgreat value in learning Mathematics	09 05	07 05	05 05	02 12	3.00 2.11
12	Visual Basic stimulates one to accomplish success	04 10	04 09	05 06	10 02	2.09 3.00
13.	Visual Basic creates fear for one's learning	12 07	02 07	03 04	06 09	2.87 2.44
14	Visual Basic is not needed for one's grows in life	04 01	03 07	07 09	09 10	1.91 1.96
15	Visual Basic makes pupils not social	03 09	04 03	00 01	16 14	1.74 2.26
16.	Visual Basic makes pupil hasno energy into completing the task at hand	10 12	03 04	06 08	04 03	2.83 2.93
17	Visual Basic affords pupil's minimal work	04 12	02 03	06 07	11 15	1.96 3.19
18.	Visual Basic affords pupil to go above	06 11	01 02	08 01	08 13	2.22 2.41
19.	Visual Basic affords pupil to go behind end result	02 07	01 07	07 10	13 03	1.65 2.67
20.	Quality work in Visual Basicis affected by Classroomsurrounds	05 08	04 06	01 05	13 08	2.04 2.52
21.	Quality work in Visual Basic is affected by school Environment	05 07	07 09	08 07	03 04	2.61 2.70
22.	Quality work in Visual Basic is affected by pupil's Emotions	12 12	05 09	00 01	06 05	3.00 3.04
	Subtotal	147	087	100	172	2.41
	50= 4,170	177	116	211	197	2.51

Keys: Strongly Agreed=4, Agreed=3, Disagreed=2, Strongly Disagreed=1, (M)(F)=(Male) (F),(Male Grand Mean)(Female Grand Mean) = =(2.41)(2.51), Male=23, Female=27, Total=50

Table 2 described students' gender' Attitudes Towards Mathematics (PATM) with different mean scores to the Visual Basic but the overall criterion mean score of 2.5 as referenced point to the students 'adaptability.

Hypotheses

Ho1: There is no significant difference or relationship between pre and post attitudinal scores in Visual Basic Primary Schools' Mathematics.

Table 3a: Computationof Pre-Post attitudinal scores in Visual Basic Primary Schools' Mathematics

Pre(X)	Post(Y)	X^2	Y^2	XY	Mean (μ of X)	Mean (μ of Y)
346	346	119,716	119,716	119,716		
217	217	47,089	47,089	47,089		
238	238	55,930	56,644	55,930	280	281
319	323	101,761	104,329	103,037		
1,120	1,124	324,496	327,778	325,773		

Table 3b: Relationship ofPre-Post attitudinal scores in Visual Basic Primary Schools' Mathematics

Pre-attitudinal scores in Visual Basic Primary Schools' Mathematics	50	280	0.99 ≓ 1.0	Perfect or Very Strong
Post attitudinal scores in Visual Basic Primary Schools' Mathematics	50	281		

Table 3a and bshowed the pre and post's means (μ_1, μ_2) of attitudinal scores in Visual Basic were (280, 281) in Visual Basic with Pearson Moment Correlation Coefficient 1.0. The Null hypothesis is rejected**,** and one says there was significant relationship between pre and post attitudinal scores in Visual Basic Primary Schools' Mathematics

Ho2: There is no significant difference or relationship between gender mean attitudinal scores in Visual Basic Primary Schools' Mathematics.

Table 4- Gender's mean attitudinal scores in Visual Basic Primary Schools' **Mathematics**

Gender's scores in Visual Basic Primary Schools' Mathematics	N	Means (μ)	Standard. Deviation	Crit-t	Cal-t	df	Sig.
Males' mean scores in Visual Basic	23	126.50	114.366	-2.00	-0.05	48	P>0.05
Female's mean score in Visual Basic	27	152.75	136.841				

The above table 4 showed male and female's mean and standard deviation (μ, σ,) of attitudinal scores in Visual Basic were (126.50, 114.366) and (152.75, 136.841) respectively as gender's mean attitudinal scores in Visual Basic Primary Schools' Mathematics. With the aid of t-test where Crit-t = -2.0106, *Cal.t* =-0.05, df =48, P >0 .05 level of significance, showing not rejecting the Null hypothesis and confirm that therewas no significant gender mean attitudinal scores in Visual Basic Primary Schools' Mathematics.

Discussions

Olaoye (2013) posited in a paper titled 'Better attitude attainment in Teaching Profession' thatattitude in man's life constitute an indispensable variable in life as it constituted the altitude manreaches in life due to its 100% variation in life, in particular when it is done in numericalconfiguration of the English Alphabets from A-Z, among other words configurations

This finding is consistent with Warren(2000)as cited by Akpan & Abia (2009) asserted that when new technologies are integrated into teaching and learning, there is greater student engagement in learning, and greater engagement equals to higher achievement. During learning it was noticed that Visual Basic morale and enthusiasm was high and they were seen showing great interest in the lessons. Creating a web of information relating to every question portrayed the need for pupils to be problem-solvers and thinkers and not just memorizers of rules and the pupils found this very enjoyable. Their findings indicated that the use of colour graphics in instructional modules as opposed to black and white graphics promotes achievement, particularly when learning concepts. Some Research suggests that using visual treatments in lessons enhances student achievement with varying degrees of success. Study indicated that there would always be a difference in the attitudes of pupils exposedto visual basic. It makes pupils use their intellectual ability during learning processes; and therefore, supports the report by Harding & Terrel (2006) that it has been found that visual learning technique is one of the best methods for studentson how to learn and think and be enthusiastic.

The causes of the gender differences in mathematics attitude test were found to be multifaceted. This leads to the submission of Stylianou, (2001) that the gender differences in visual basic were more marked for application problems than computation problems, with girls showing significantly lower confidence for application problems via visual basic. Despite such consistent findings of girls' low confidence in mathematics, studies of classroom environment have shown that the girls' confidence in Mathematics improved greatly in classes which actively involved girls in the learning of Mathematics. Several studies have reported that there are gender differences in attitude towards learning mathematics via visual basic with girls showing more negative attitudes than boys.Stylianou, (2001) reported from her study of the perceptions and use of visualization by mathematicians and undergraduate students, and concluded that the results gave prevalent evidence that both experts and novices perceive visual representation as a useful tool.

Conclusions

According to the above-mentioned result, attitude of pupils in Mathematics could be influenced by the use of visual basicThis confirms the postulation of Stylianou, (2001) that an effective use of visual aids and tools would have a positive enhancement of learning from about 50% to 80%.Hyde, Fennema & Lemon (2009) visual aids provided practical solutions to the problems of Mathematics than a verbal textbook.It was concluded that attitudes of male and female are significantly not the same in the study which may be the same when carrying out the research among the secondary and tertiary students.

Implications

hese findings have implication for educational administrators, teachers and teachers because the pupils play an important role before any educational process could succeed. There is therefore need for appropriate government agencies to provide necessary visual facilities for learning processes to go on smoothly in educational system,and create an environment in which pupils do not feel threatened and relax.Secondly, assisted learning equipment are provided in schools they improve the performance of pupils and influence cooperative grouping, thereby help pupils to understand others’ problems as they do.

Recommendations

The research was based on primary five pupils in Ibadan North local government area Oyo State.Students should be exposed and be given the necessary visual equipment and facilities in order to facilitate learning in primary school.Government and Policy makers in primary schools should make significant fund available to provide visual basic software and computer system in schools, for required numbers of pupils.Primary school teachers should be groomed on how to make use of visual basic software, how to make use of the computer system in the school as this would enhance their jobs Pupils in primary school should be sensitized and encouraged to use visual aids in the school and at home.To ease the work of teachers’ meaningful academic excellence, the bodies concerned, be it the state, ministry of education, association as well as the school proprietors should endeavour provide the necessary materials in schools.

Limitation of the Study

The study composed only pupils in Ibadan North local government area Oyo State, Nigeria, it could be strengthened by increasing the sample size as the data analysis results and findings may vary substantially when the sample size is increased or decreased.

Suggestions for Further Studies

The research should also be carried out among secondary school students. Training of teachers should also be well oriented about the use of visual basic before using it to test the ability of students.Government should provide credit facilities for researchers who wish to continue the study because of its capital intensive for large pupils' population.The scope of the study should be widenedi.e. the research should be carried among states of the nation not only in Ibadan.

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