EFFECT OF USING VIDEO INSTRUCTIONAL PACKAGE IN YORUBA LANGAUGE ON LOWER BASIC STUDENTS ACHIEVEMENT ON MATHEMATICS IN OFFA LOCAL GOVERNMENT AREA, KWARA STATE

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ABSTRACT

This study investigate on the effect of using video Instructional Package in Yoruba Language on Lower Basic Students' Achievement in mathematics in Offa, Kwara State. The study had three objectives and two null hypotheses. The study adopted a Pre-test, Post-test, non-equivalent, randomized control group design. Two research questions and two research hypotheses were formulated and tested at 0.05 level of significance. The experimental and the control groups consisted of 40 students 12 males and 8 females respectively were randomly selected from four secondary schools that were purposely sample. Experts in the field of Mathematics, Educational Technology and Yoruba language validated two research instruments used for the study.

The reliability coefficient of the Odinwon Arin Idanwo Aseyori (OAIA) was 0.82. while the reliability of Measurement of Central Tendency Achievement Test (MCTAT) was found to be 0.80. The hypotheses were tested using Person Product Moment Correlation Analysis (PPMCA) using Statistical Package for Social Sciences (SPSS) 23.00 version. The result of the study revealed that there is significant difference in the means achievement score of students exposed to the Yoruba video instructional package and those taught using the conventional lecture method. Also the result of the study revealed that there was no significant difference between male and female students taught Measurement of Central Tendency using Video Instructional Package in Yoruba Language. Based on the findings from the study it was recommended that video instructional package in Yoruba language be encouraged for teaching Mathematics in any community where those residing speaks Yoruba language in order to enhance effective teaching and learning of Mathematics at junior secondary school level.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of The Study

Science has been considered as the basis of technologies in which most developing international locations like Nigeria are struggling to develop scientifically and technologically. Everything about the world revolves spherical is about science. Science is a dynamic human endeavor which concerned with comprehension the working of the world (Ogunleye, 2002). Owolabi (2004) described science as an essential part of human society. Science includes some fundamental disciplines such as Physics, Biology, Chemistry and Mathematics.

Mathematics is seen in all our way of human endeavour, in our day to day activities. It plays an important role in education, it is a core subject in secondary education curriculum. Mathematics is the abstract science of number, quantity, and space, either as abstract concepts (pure mathematics), as industrial (applied mathematics) or as statistical mathematics (Oxford dictionaries). Mathematics is seen in all facets of human life and in day to day occupations such like internet technology, engineering, construction, banking, trading, scientific discoveries and many more to mention few (Gambari 2016). Learning of mathematics develops good knowledge and understanding attributable to its application to all or any meadow of human endeavour. It is a field of study that brings about intellection and way of thinking toward an answer to problem that to be solve. In viewed by Gouba (2008), mathematics is a peculiar subject that is known in the world it is therefore integrated in education, Mathematics is also seen as the bedrock of science that is, the language of science. It play an important role of all science and technologies all over the world advancement (Uchechi 2013).Gambari, Aguele, Agwagah, et al. (2013) viewed

mathematics as a subject that take a major position in developing the individual knowledge and plays a major role in enhancing the country socioeconomic development.

Despite all the importance of mathematics, students still have a lot of challenges in studying mathematics, from the primary school level to the tertiary level. Teaching mathematics in Nigeria follows a common method even when the method used do no longer beautify student-hobby or their performance in Mathematics. Many researchers have carried out a lot of research on this and discovered so many factors affecting the achievement and interest of student performance in mathematics such as Hassan and Wushishi (2013), Gambari(2013), Bashir (2018).Another factor affecting the performance of student achievement and interest in studying mathematics is government factor, government provision of educational facilities and qualified teaching personnel for effective teaching of mathematics. Government can enhance students learning of school subjects such as mathematics by reducing the number of unqualified school teachers (mathematics) by 80percent (NEEDS, 2007). Government is expected to provide schools with instructional materials such as Geo-boards and Heliographs in teaching plane geometry in secondary schools (Ozigbo,1994) and computer aided instruction in teaching statistics and probability to students (Ozofor, 2001). Government intervention by providing educational facilities, instructional materials and conducive mathematics learning environment may correlate positively with students' mathematics achievement.

Another factor affecting the performance of students in mathematics is the medium of which instructions are passed to the student that is, language in which the teacher used in teaching (Bashir, 2018). Human beings need language to grasp things intellectually and to get others to do so, to a massive extent, language defines humanity (Oginni Omoniyi, Isreal & Owolabi 2013). Language of instruction has been considered to be a vital component of quality education

especially in academic performance of student in mathematics. The term mother tongue is broad, According to UNESCO (2003), mother tongue or first language is defined as the language that an individual uses and learn for the very first time in life, that he or she uses the most in standard day by day activities, in which he or she is nicely versed and identifies himself or herself as belonging to a unique linguistic community and then to the wider society. Mother tongue is the first language an individual have been exposed to from birth which the child understand most, it is considered as the vehicle of learning and proficiency in the language of instruction facilitate learning according to (Awoyemi, Adeneye, Love el at. 2012). Mother tongue is the first language learnt from infancy (early childhood) at home, it's a language that the child learns to speak first. In most homes, it is used as a means of communication. Among the educationist its seems to be conviction that mother tongue has a big role to play in Nigeria educational system and the question been asked is that which language should mathematics used as a medium of instruction. A lot of researches have carried out research and discover that the use of native language in mathematics will help and student understanding of mathematics concept or topic will be much better (Nicol, 2005; Setati & Barwell 2006). According to Angelina (2015), the use of mother tongue as a medium of instruction helps a lot in achievement and interest of student performance in education. The students find it difficult to comprehend what they are been taught in school in using the official language than their mother tongue language which affect the academic performance of the students.

Another factor includes the Classroom Instruction (CI). Classroom Instruction serves as a means through which teacher attitudes, student attitudes, and student's achievement related manners can affect student achievement (Sa'ad, Adamu, Sadiq 2014). Classroom Instruction is a broad term that covers instructional strategies, materials and equipment used in the classroom through

teaching and learning process (Tessema, 2010). The choice of instructional strategy can influence students' affect towards mathematics (Hodges & Kim, 2013; Hosack 2006, Schukajlow et al., 2012). Teacher attitude, student attitude and student's achievement-related behaviour may change as teachers and students interact in the classroom (Sa'ad, Adamu, Sadiq 2014). Classroom instructional strategies that provide students with multiple opportunities to learn are modeling, student-centred, cooperative-learning, collaborative discussion, and spatial thinking (Tessema, 2010). These instructional practices have the potential to impact students' attitudes towards mathematics positively. That is why a lot of researcher have tried using Computer Assist Instruction (CAI) / Instructional package in teaching.

Computer Assist Instruction (CAI) / Web Based Instruction is an automated interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that take place (wikieducator, 2008). Computer Assist Instruction (CAI) includes a variety of computer- based packages that provide interactive instruction. We are now in the era of computer age where multimedia presentation like computer instructional package or video base instruction can be developed to enhance and motivate the student through the audio-visual material as a medium of instruction in teaching. Gambari, Yaki, Gana and Ughovwa (2014), Gambari, and Anyanwu (2013), Adegoke (2010); Kuti(2006); and Moreno and Mayer (2000) highlighted that multimedia such as computer aided instruction or video based instruction can be used for teaching to enhance the performance of students towards achievement and interest in mathematics. Multimedia presentation can be defined as means in which words and pictures can be presented to the students to facilitate learning. Video instruction is a kind of multimedia that transmit verbal and non-verbal with the combination of Audio and Visual materials. It develops continuity of throght and offers a reality of experience that stimulates self-

activities on the part of the students (Nwoji2000). In video instruction, teacher produces a video instructional package which is played on a video player connected to a television monitor which is put on, for the learner to view. At interval he may choose to stop playing and explain certain points or factors or probably wait till the end of the lesson. Learners have the opportunity to repeat the lesson over and over again (Orisabiyi, 2007).

With instructional videos, the demonstration is required to be conducted and recorded once, and can be distributed to a number of people on a number of occasions. As a result, time is saved for both the instructor and students (Aragon & Zibrowski, 2008). The videos also allow the students to be independent learners as they can often access these applications when and where it is convenient for them, granted that the exercises are posted online or shared in another manner. This gives the students control to go through the process at their own pace with the option of repeating the activity. Ultimately, instructional videos support both teaching and learning as instructors do not have to repeat themselves, and students can learn in a way that meets their needs (Lam, 2005). Videos also allow for fluid movements of the progressive steps to be demonstrated. On paper-based handouts, step-by-step instructions are usually typed out with screen captures of the significant steps to provide supplementary assistance. Although the textual instructions may explain exactly to how to get from one step to the next, those who are visual learners are at a disadvantage because they will not be able to see the fluid actions between each step. Dynamic graphics through instructional videos enable recordings of actual demonstrations to be presented; therefore, students can see the exact actions that were taken to perform a task (Hartmann, 2006). “The animations provide opportunities for students to take greater control of their learning. They can be played step-by-step and they can be replayed until they are fully understood. Interactive models are used to help make abstract concepts more tangible” (Bradley

& Boyle, 2004,Teaching students with the use of mother tongue and video instructional package creates a conducive surroundings or environment for teaching to take place and decorate a steady glide of knowledge from teachers to the students which as well makes the class interactive and when a class is interactive, it shows that the students are capable to understand what is being taught, at least if not all the content however to a large extent. The use of mother tongue with video instructional package in teaching mathematics in junior secondary schools has a lot of advantages two as;

1. It makes the students to fear not towards the study of mathematics.
2. It makes the students have the ability to create mathematical expressions in their personal mother tongue or language.
3. It helps the students to pass the knowledge of what they are been taught to their that are uneducated

Now, the rate at which students fear and run away from arithmetic is growing daily. Puteh (2002) described arithmetic anxiety as a repetitive system that is based on information gathered by way of people from their surroundings, and in accordance to Arem (2009), college students with high mathematics anxiety degrees interact in terrible wondering about their self-ability. This is due to the fact they do no longer understand the language of education being used as medium of practise in the classroom (DepEd, 2011).

Using of mother tongue to teach now allows the young novices to be capable to construct and provide an explanation for without worry of making mistakes, fluent their thoughts and add new ideas to that which they already know. Hence the achievement of any country depends on the value and quality of mathematics success achievement in school system. The concern on gender in mathematics as been an area of problem in academic system for a long while, and it has been

of wonderful difficulty to the United Nations Educational, Scientific, and Cultural Organisation (UNESCO). Considering some historic and cultural reasons, ladies have been seen to be diminished in the area of science. The learn about of science makes it better for all and it's much less possibly to increase obstacles to lady participation. Boahene (2006) indicates that in many parts of Africa, women also receive a science training of decrease high-quality than boys. Nevertheless, this research work will appear into the effect of video instructional package in Mother Tongue (Yoruba) language on lower basic student achievement in mathematics in Offa Kwara State.

1.2 Statement of The Problem

The researcher observes that several students in respect to mathematics see it as a difficult subject. More or less learner consider it that they can never know it because of the predetermined believe they had that mathematics is a difficult subject and so our language has been taken insignificant in communicating of ideas, utmost prominently in teaching of subject that appears to be abstract in nature like mathematics. Several students at all times find it hard to understand and deduce mathematics language appropriately which leads to the increase in poor academic performance in mathematics. Several researchers have tried different method in handily the problem of poor performance in mathematics using computer Assist Instruction (CAI) such as (Bashir, Wushishi, Gambari and Olayinka 2018), Video- tape such as (Gambari, Shittu, Daramola, Florence and Jimoh 2016) internet learning such as (Arshad Ahmed Saeed 2015), mobile learning but yet the some learners still find it difficult to comprehend what they are been taught. For that reason, the investigator sought to examine the effect of using video instructional package in Yoruba language to teach abstract subject like mathematics, and determine its effect on the achievement of junior secondary school student in Offa, Kwara State.

1.3 Aim and Objective of the Study

The aim of this research is to investigate the effect of using video instructional package in Yoruba language in order to enhance the achievement of students in mathematics in Junior Secondary School in Offa L.G.A, Kwara State.

Objective of The Study

1. To developed a video instructional package in mathematics in Yoruba language
2. To determine the effect of the video instructional package in Yoruba language on students achievement and interest in mathematics of lower basic students in Offa local government kwara state.
3. To investigate the effect of the video instructional package on male and female mathematics achievement of lower basic level student in Kwara State.

1.4 Research Question

The study will address the following research questions:

1. Is there any difference in the mean mathematics achievement scores of lower basic level student taught using video instructional package in Yoruba language and those taught with conventional teaching method using English language?
2. Will there be any difference in the mean of male and female mathematics basic level student taught using video instructional package in Yoruba language and those taught with conventional teaching method using English language

1.5 Null Hypotheses

The following hypotheses are generated on the basis of the research questions.

HO_1: There is no significant difference in the achievement scores of lower basic level students taught mathematics using the video instructional package and those taught with conventional teaching method using English language.

HO_2: These is no significant difference in the means achievement scores of male and female lower basic level student taught mathematics using the video instructional package and those taught with conventional teaching method using English language.

1.6 Significance of The Study

The research will be useful to the curriculum planners because it will enable them look into the use of indigenous language and a well video instructional package in the teaching of mathematics.

The research will be benefited to school owners, it will enable them organize seminars and conferences on how to inculcate the use of the video instructional package in the teaching and learning of mathematics.

The research will be benefited to students, it will enable them to understand mathematics better, comprehend and retain what they have learnt and help the student in participating on mathematics because the student will be able to study at their own pace and have interest to study it and therefore improve their academic performance since it is conduct through their indigenous language.

The research will be benefited to the teacher, it enables them to make use of these video instructional package so that teaching and learning can be more effective.

To the government, this research will make the educator, government policy maker on educational curriculum for the lower basic education to encourage the used Yoruba language as a medium of instruction in schools. This research will assist the Kwara state government, Kwara State Universal Basic Education Board to plane proper policies that will make the study of mathematics using the tribal language medium at every level of the basic education.

1.7 Scope of The Study

The scope of the study covers some selected junior secondary in Offa local government Kwara State. This study will be restricted to over student of lower basic level Offa local government in Kwara state. This study will bases on Junior Secondary School of class two because the topic is in JSS2 syllabus.

1.8 Definition of Major Terms

Mathematics: Is the abstract science of number, quantity, and space, either as abstract concepts, as industrial or as statistical mathematics.

Computer Assisted Instruction (CAI): is an interactive instructional technique whereby a computer is used to present the video instructional material and monitor the learning that takes place.

Video Instructional package: This refer to the tool used in teaching for effective teaching and learning.

Mother tongue: Is the first language that an individual has been exposed to from birth that was learned from home.

Aworan Imo: This refers to a video package developed in Yoruba language as the medium of instruction for self-learning on measurement of location in mathematics.

Idanwo Iwolesa (pre-test): The instrument to be used as pre-test for the study.

Idanwo Asekagbasa (post-test): The instrument to be used as post-test after the use of Aworan Imo for teaching.

Science: it is an intellectual activity that carries on by human that is designed to discover information about the natural world.

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter presents a review of the relevant literature to the study, the review is present under the following headings.

*Conceptual framework

*Theoretical framework

*Empirical studies

*Summary of literature review

2.1 Conceptual Framework

Meaning of Mathematics

Mathematics is definitely the science that deals with common sense of shapes, volume and arrangement. Merriam-Webster dictionary (2017), defined mathematics as the science of numbers and their operations, interrelations, combinations, generalization, abstractions and of space configurations and their structure, measurement, transformation and generalization. Mathematics is seen in all around us, it is in the whole of things we do, and in fact it is the building block of our lives. Looking into the recorded history, its discovery has been at the forefront of each enlightened or civilised society and also in use even in the most basic of cultures. The need of mathematics rises based on the want of the society. The more tough a society, the extra needed of mathematics in the society.

Encarta (2007) also described mathematics as the study of relationship amongst numbers, structure, shape and quantities. Its curriculum is the foundation of various courses like physics,

chemistry, accounting, economic and so on. Current society depends on science to handle immediately hassle and science also can't do without mathematics and there is no technology exclusive of science. Every student in science should have an average understanding of mathematics as mathematics knowledge is essential for achievement students in science. Due to the importance role mathematics take in sciences, it is one of the core necessities for admissions into any science, industrial and technical associated applications in any tertiary organization in Nigeria. Federal Republic of Nigeria, National policy on Education (FRN, 2004) stress that mathematics helps to provide students to live on the existing scientific and technological environment.

Due to the importance of mathematics Oxford Dictionary (2001) considered mathematics as the bedrock of science, besides it, it will be difficult to study different science course like biology, chemistry physics and so on. Mathematics is a science which include of logical reasoning, coming to conclusion from assumption, prepared information and strategic reason which depends on commonplace rules, laws or Principles. Oxford Advanced Learners Dictionary (2001) sees Mathematics "as the science of shape and numbers, (which involves; arithmetic, algebra, trigonometry, geometry as the branches)". New encyclopaedia Britannica (2016) described Mathematics as the science of structure, systematic relation which evolves from basic practice of counting, describing the structure of objects and measuring its sizes. Mathematics is relevant in all human activities, both in social or financial view; it is an vital component in our everyday things to do that we all do day in, day out in one way or the other. Finally, it can be put ahead that mathematics is actually the science that deal with logic of shapes, reasoning, extent and arrangement. According to National policy on training (FRN, 2004) attaching importance of Mathematics as a core subject in secondary school, the following targets have been noted;

1. To enhance the logical and concrete way of thinking of the students;
2. To foster the need and capability to be precise to an extent relevant to the problem at hand;
3. To enhance and inculcate the numerical knowledge of students;
4. To improvement the interest of student in Mathematics and to furnish strong foundation for everyday living.
5. To advance the capability to make relevant judgement through discrimination of values

Furthermore, National policy of training (FRN, 2004) additionally noted the objectives of mathematics in senior secondary school such as;

1. Development of the capability to make relevant choice via discrimination of value.
2. Development of mental independent.
3. Communication of taught through symbolic expression and graph.
4. Development of mental curiosity.
5. Development of the capability to discriminate between relevant and irrelevant data.

2.1.1 Concept of Mathematics

Mathematics was established to bring in knowledgeable set of individuals who are going to be ready to apply the knowledge of mathematics to everyday activities and as well solving the problem and making of suggestion of perfect decision. Weaknesses among students within the space of mathematics can certainly have an effect on the event of the country in year to return. In mathematics context, it seems that several students who are weak in mathematics worry whereas trying mathematics skills to resolve issues (Mohammed and Tamizi 2010). Mathematical tension is thought to be associate with anxiety or the sensation of worry regarding mathematics. It's

terribly straightforward to forget things and as well as to lose confidence in oneself in mathematics once there's worry or tension in any subject. The fear of mathematics is explain as the conception that involve both the way of thinking and the affective behaviour of the student which is related to poor achievements level in school. The parent, teacher strategy, government policies can influence the student academic performance.

2.1.2 Concept of Teaching Mathematics

A student who has a good knowledge of mathematics conception advance to an advance level of learning which involve abstract thinking and before a student can have a good understanding he / she must be well taught by high qualify and effective teacher who knows the ethics of teaching and instructing mathematics effectively. Based on the noted in the Australian Association of Mathematics Teachers' Standards for Excellence in Teaching Mathematics in Australian Schools, "Effective schools are only effective to the level that they have effective teachers" (2006) some of the ethics or habits that can put instructing of arithmetic on proper tracks are;

As a teacher bring out sense in whatever you are teaching, teach the student to understanding the reason why something work and not solely how they work. Relating to our immediate surroundings also helps the student to assimilate earlier and also helps the student to deal with problem when they arise. Moreover, this understanding does not always comes immediately when they are taught it might even take several years for a student to grasp the full understanding of the concept.

What are your goals: As an effective mathematics teacher, what are the dreams you set in location each time you are teaching or impacting knowledge into the students life's, is it to end the syllabus or curriculum so that you will not be query, or to make sure your students pass by properly in their check or examination or do you have the goal that my college students can add,

simplify and multiply fractions or the students can divide just for them to understand and able to apply what they have been taught. All these are all sub goals and it has been observed that the closing desires of the teaching have been neglected. One of essential goals of high quality teaching of mathematics is to allow the students to recognize and understand information around them and to put together our students for advance studies in mathematics and sciences.

Understand your tools: it is evident that mathematics teaching equipment are several beginning from white or black board, ruler, pencil, eraser, compass, protractor, computer software, interactive activities, workbooks, fun books, textbooks, games, videos, animated lessons, on-line tutorials and so on. As an effective teacher it is vital to learn how to make use of available equipment effectively, make use of the proper equipment for the apt topic. Quality teaching is more helpful than extent of the area covered.

Love the subject: as a teacher you should always encourage the student to live very good life, you need to show the student interest in what you are teaching because the student look at you to make up there thinking membrane. Some of nowadays so called teacher are fun of taking excuses to go out when it is time to teach, just because it is not basically there area of specialization and they have no interest in it but they took is as a job to teach and towards the direction of the end of the time period they will now rush the college students to cover up the curriculum and with the aid of that time, students will now not have time to ask lots questions because there is low or no more curiosity on the subject. As an effective mathematics teacher you should love it and show it in terms of teaching.

Odili (2006) noted some of the problem in teaching of mathematics in Junior Secondary School in Nigeria, which are:

1. Poor teaching strategies

2. Lack of infrastructure
3. Unavailability of instructional materials
4. Unqualified teachers
5. Poor government policy
6. Lack of teaching materials

It is observe that the government should employ qualify teacher and also the teacher should be given regular orientation in order to improve the teacher attitude towards teacher which will reduce the poor academic performance of students.

2.1.3 Gender and Mathematics Achievement.

Gender is certainly of being a male or a female, it can as well be seen as the social and cultural thinking that distinguish a girl from a male and also a way in which male and ladies engage with each other in a particular community. The male is also consider as the masculine while the woman is referred to as the feminine. Gender is particularly constructed occurrence that is brought about as culture ascribes different roles, duties, behaviors, and mannerisms to the two sexes, (Mangvwat, 2006). It is a community connotation that has resonance psychosomatic background, and it is used to refer to particular cultural patterns of manners that are recognized to human sexes. Gender relates to cultural attributes of both males and females (Akpochafo, 2009). Gender according to Lahey (2003) is a psychological experience of being a male or female. It has to do with personality and central components of self-concept. Several lookup as being carried out to comprehend the stage of anxiousness closer to mathematics between the male and the lady student.

Researchers like (Salwani and Salleh, 2001; Woodard, 2004; Yuksel-Şahin, 2008; Karimi and Venkatesan, 2009; Khatoon and Mahmood,2010) has carried out various research and argued that ladies have higher mathematics anxiousness than the males. It is observed that most female students are recognized to be shy in classes than male students and this generally have a negative impact on their capability to learn. According to (Khatoon and Mahmood, 2010) research it is found that male students had been observed to be greater energetic in wider vary of social activities than the woman students. Even in instructional activities, males are usually determined at the forefront.

Yuksel-Şahin (2008) learn about on secondary college students in Turkey stated that the stereotypical view of this difficulty has an effective impact. Most instances women believe that the men are blessed with the benefit of appreciation arithmetic and such faith usually have a negatively impact on lady pupil and their first hypothesis about fulfillment in arithmetic can have a lengthy time affect on their arithmetic achievements. Research that focus on cognitive development among student of various ages, document that mathematics reasoning among females and males develops from a shared set of biologically based capabilities that lead both gender to develop an equal ability for mathematics (Speike 2011). In general both girls and boys have the same instinctive ability to learn mathematics skills and are born interested in a variety of objects and idea. Social cultural forces impact false beliefs that boys are born with a greater aptitude for mathematics environment such as mathematics classroom and heavily subjective by reliefs that girls may be disadvantage genetically when it comes to mathematics ability can have a serious negative effect on mathematics interest among girls. Dweek (2010) in particular, parent plays an important role in shaping how student sight ability and related performance. If parents think that mathematics ability is genetic and success reflects genetic predilection student who

receive such message and then come across difficulty see those challenges as proof that they lack natural mathematical ability (Dweek & Leggett 2010).

In turn, this fixed ability way of thinking results in decreased self-confidence and interest in mathematics (Dweek,2011), at the same time, girls who view mathematics ability as a gift lose interest in mathematics more readily than girls who view mathematics ability as something that can be developed or cultivated (Mueller & Dweek 2010).

Overall, female achievement in mathematics is more likely to be attributed to hard work than to innate ability. This type of behaviour can communicate to girls that they do not have the ability to perform in mathematics and must make up for that with hard work. This negatively impacts female attitude because girl see mathematics as something in which they will experiences little success and therefore disengages from further study of the subject (Usher,2011). Moreover, some researchers do no longer support the theory. Based on a number of research, some have argued that right here is no enormous distinction in mathematics anxiety between the genders (Marsh and Tapia, 2002; Elenchothy, 2007; Mohamed and Tarmizi, 2010).

2.1.4 Concept of Mother Tongue

According to Ajepe (2014), cited that mother tongue is the first language that is acquired by using a infant as he grows up within a speech community. It is a native language discovered by children, received via birth or from ancestor and there by means of exceeded from one generation to the other. The Nigerian Language coverage as mentioned by way of Lawal (2005) stated in Olaolorunet al., (2013) “has been very challenging to implement due to the fact of the mind-set of the trained type who will instead have their youth taught English Language proper from the cradle”. Now in educational system, foreign language as taken an vital vicinity in Nigeria, Lawal (2005) mentioned by way of Olaolorunet al.,(2013) referred to similarly that

“parents out of ignorance insulate the kids from the mother tongue to result in facility in the use of English Language for that reason depriving young people of a basic source of schooling and innovative development”, Ofulue, (2008) went similarly to say that the ideas of empowerment and usefulness make the encouragement of the mom tongue meet with resistance where the children’s mother- tongue is now not the dominant language. Language policies have an effect on attitudes, because prescription of which language be used is a key element that affects the attitudes of groups in the direction of their mother tongues. Adegbija (2003). It is observed that before an academic satisfactory can improve drastically there have to be improvement school facilities, having a properly trained teacher that have a full understanding of the content material to be taught. Student who know the language the instructor makes use of to coach are extra probable to get involved meaningfully, they will be in a position to ask what they do now not apprehend due to the fact they are taught in the language they apprehend most.

2.1.5 Concept of Academic Achievement

Poor academic achievement on students has been a extraordinary task in Nigeria as a whole, parents and the authorities putting their assets or investment in the academic gadget believes that its no longer producing nice result, instructors on the other quit complains about the college students low performances both inner and most particularly in everlasting examinations. Looking into the annual end result of junior secondary certificate examination (JSCE) end result validate the difficult nature of poor academic achievements in extraordinary school challenge between 2007 until date. Academic success is constantly viewed through the contrast of examination results and negative tutorial fulfillment is the performance that fall under the most wanted standard. According to the grading system, any rating between “50-59” is said to be deposit which is additionally termed as common mark, from “60-69” is a exact end result whilst from

“70-100” is termed as excellent or first-rate result. However, considering the widely wide-spread overall performance of students if ample time is taken to appear into the fashionable of the examination conducted, one will see surely that students overall performance are constantly beneath expectation or higher nonetheless very poor.

Reports have published that venture work to discover the motives of negative tutorial achievement in mathematics can in no way cease if ideal measures are not put in place. Some of the causes of bad achievement in mathematics is that there is lack of concrete appreciation of the nature of the subject, most students are now not acquainted or acquainted with the vocabularies or terms of the subject, most students and teachers restriction the find out about of mathematics to school environments alone, students are observed of cramming or memorizing mathematical formulae, bad interpersonal relationship between college students and teachers, which ought no longer to be so. In phrases of teaching, most instructors locate it challenging to put together beforehand of the type with the aid of making ready a comprehensive lesson notice and lesson format and even replace their knowledge on the challenge region they are teaching, some teachers are obsolete in their field while some are vast, the use of educational materials also goes a long way in instructing process, a appropriate teacher be capable to improvise if the school can’t provide. In terms of government, conducive environment and infrastructure will now not solely boost academic overall performance however additionally attract student’s attention to come to faculty and learn, lack of provision of textbooks and instructional substances in authorities schools is a component to be addressed. In terms of parent, they can pay a essential position in the fulfillment of a student, mother and father ought to make certain that the toddler does he’s or her assignments oftentimes and also make sure the baby exercise all that used to be taught in college before going to bed because the secret of success in mathematics is regular

practice and besides this failure is certain to occur, this will additionally go a lengthy way to help the child's performance. Another motive why some students fail is the lack of ability to put down what they understand in their very own terms

Some different elements identified by means of researchers are: motivational directions, getting to know behavior and ineffective teaching method. Possible solutions to some of the problems is to domesticate mathematics lifestyle and tries to switch the same to the students, we have to seem to be inward to create what can appeal to college students attention to arithmetic like video games and draft that encourages mathematical concept and more also, there ought to be exceptional encouragements like awards, rapid promotion, cash for instructors that are significant and competent, this will inspire them to put in greater effort and also serve as a mission for others that are slothful. Student's achievement in arithmetic will increase when the teachers are capable and capable to spotlight the importance of mastering arithmetic

National mathematical centre, Abuja (NMC, 2009) said mathematics instructing and mastering in secondary faculties has effectively researched into the motive and answer for failure in arithmetic external examinations, and used to be observed that "poor performance in arithmetic examinations as greater to do with teachers methodology of instructing than the given content of curricular of the college mathematics" (NMC, 2009). two It is a very hazardous thing if mathematics is not well taught in junior secondary schools, due to the fact it's the bedrock of different sciences which capacity pupil who does no longer understand arithmetic can't recognize other sciences or things around the globe. The particular which means of mathematics is essentially on matters that can be counted which takes a shiny role in our each day activities and there have to be speedy improvement in the teaching and mastering of mathematics.

2.1.6 The Concept of Mother Tongue and Academic Achievement

Oluwole, (2008) averred that Mother tongue can to be described as the language which a set of people viewed to inhabitants of a surrounding area acquire in the early years and which ultimately become their natural instrument of thoughts and communication. Mother tongue is the first language that a child learned. In terms of that view, an individual is defined as a native speaker of the first language, even though one may as well also be a native speaker of more than one language if all of the languages were learn without formal education, such as via cultural immersion earlier than puberty. Frequently a child learns the basics of the first language(s) from his relatives (Wikipedia, 2007), the child learn faster and communicate in the language they understands well.

It was in focus of the significance and contributions of mother tongue to teaching that made the Federal Ministry of Education in Collaboration with other educational statutory organizations include in the National Policy on Education published in 1977, revised in 1981, the use of mother tongue as a medium of teaching at the junior secondary school level.

2.1.7 Importance of Mother Tongue in Education:

Benefits of Mother Tongue Method of instruction in Teaching and Learning. The implementation of mother tongue-based method of instruction in the classroom during teaching in a multilingual setting affects the way students learn, as a teaching strategy, it not only adapt to the interplay of the different cultures and languages but give importance to them as well (Jane K. et al., , 2014). It has as well result in a number of advantages in terms of quality and efficiency in the provision of education. It was also noted that Mother Tongue education helps students to develop not only the Mother Tongue itself but also their skills in the majority education language

(Integrated Bibliographic Information System IBIS Concept paper, 2014). In 2004, Carol highlighted the benefits of mother tongue-based instruction in the research titled "importance of mother tongue based schooling for educational quality where the following points were identified and briefly discussed below;

1. The use of mother-tongue as a medium of instruction in teaching allows students to learn through communication rather than memorization, learners can easily understand lessons taught in mother tongue which result in better retention of lessons making them more productive as compared to the use official language alone which often force teachers to translate or code-switch (alternation between languages) to convey learning, making concept learning inefficient and impeding understanding.

2. The use of mother-tongue method of instruction as a teaching strategy facilitates the transfer of linguistic and cognitive skills. Once learners have acquired basic literacy skills in the mother tongue language and communicative skills in the official language, they can begin reading and writing in the official language, efficiently transferring the literacy skills they have acquired in the familiar language and the knowledge of language, literacy and concepts learned in the mother tongue language can be accessed and used in the second language once oral official language skills are developed, and no re-learning is required.

3. Student learning can be accurately assessed in mother tongue-based bilingual classrooms. When students can express themselves effectively, teachers can easily diagnose what has been learned, what needs or left to be taught and which students need further assistance and where the assistance is required. Unlike the official language based monolingual method of instruction, where cognitive learning and language learning are confounded, making it difficult for teachers

to determine whether students have difficulty understanding the concept itself, the language of instruction or the language of the test.

4. The use of mother tongue as a medium of instruction has been found to strengthen the affective domain, involving confidence, self-esteem and identity. Thereby motivating, and increasing active participation in class work, initiative as well as creativity and expands the rate of studying of the student. Mother tongue language based classrooms allow learners to be themselves and develop their personalities as well as their intellects and express their answers freely. Unlike official language based monolingual classrooms where learners are forced to sit silently or repeat mechanically whatever is been taught, leading to frustration and ultimately repetition, failure and dropout.

Also several researcher (Walter and Dekker, 2011, Katie, 2013, Jane k. et al., 2014) have demonstrated that use of students mother tongue in education has greater impacts not only on individual students but society as a whole, as it:

- Increases access and equity.
- Improves learning outcomes.
- Reduces repetition and drop-out rates.
- Fosters positive social cultural benefits.
- Lowers overall costs (Bender, 2005).

Furthermore, Wushishi, Gimba and Abdulkadir (2016), concludes in their researcher that English language played role on science students' failure in secondary school certificates examinations.

2.1.8 Information Communication Technology in Education

Information Communication Technology has become a significant factor in the way we learn, communicate, govern ourselves and do business. Indeed, Information Communication

Technology (ICT) is a driving factor in the process of globalization. ICTs have revolutionized the teaching and learning process by increasing access through the use of a great variety of educational resources and enabling participatory pedagogies. The use of ICTs in education provides the learners with a more suitable environment to learn, serves to create interest and a learner-centred atmosphere, and helps to increase student's motivation (Serin, 2011).

Computer Based Instruction (CBI) is an example of how Information Communication Technologies are integrated into the teaching and learning process. A pedagogical technique that is computer driven is defined as Computer Based Instruction. As most modern Information Communication Technologies are computer driven, ICT's utilization in teaching and learning process is often defined as Computer Based Instruction. Computer-Assisted Instruction is one of the multimedia instructions that have been empirically proved to enhance students' performance, arouse their interest, and reduce the boring and abstract nature of mathematics (Adegoke, 2010; Gambari, 2010; Kuti, 2006; Mahmood, 2002). In recent times, emphasis has shifted from the use of computer for administration, management and other uses to computer as a medium of instruction. Computers as an instructional media can come in different forms, computer based instruction (CBI), computer based learning (CBL), computer enhanced learning (CEL), computer aided learning (CAL), computer aided instruction (CAI) and computer assisted instruction (CAI). Computer Assisted Instruction (CAI) has been reported to be one of the most effective instructional strategies for developing interest, positive attitude, promoting retention ability of the students and improving the achievements of students (Gambari & Adeghenro, 2008; Osemmwinyen, 2009; Yusuf & Afolabi, 2010).

Computer-assisted instruction (CAI) is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place. CAI is also

refers to the use of the computer as a tool to facilitate and improve instruction. CAI uses a combination of text, graphics, sound and video in enhancing the learning process. The computer has many purposes in the classroom, and it can be utilized to help a student in all areas of the curriculum. CAI programs use tutorials, drill and practice, simulation, and problem solving approaches to present topics, and they test the student's understanding. The use of CBI helps students to process and develop information, take active part in the learning process and develop their problem solving skills. According to Chang (2002), computer-based instruction is far more effective than the traditional teaching methods, as it is effective in presenting information, testing, evaluating and providing immediate feedback. CBI enables learners to progress at their own pace and provides them with appropriate alternative ways of learning by individualizing the learning process (Senemoglu, 2003). As a multimedia approach to instruction, CBI provides drawings, graphics, animation, music and other varieties that make its lesson presentations very exciting to learners, particularly because by utilizing this multi-media approach, abstract concepts are concretized for ease of understanding. CBI can also be possess in a better language the student understand well, which will make the learning more meaningful, interesting and interacting to the students (Hassan& Wushishi 2013; Bashir, Gambari & Wushishi 2018).

2.2 Theoretical Framework

2.2.1 Theories of Learning,

2.2.1.1 Cognitive Theory: Cognitive psychologist studies mental process of information, it has to do majorly with the acquisition, processing, storage, retrieval as well as the use of the acquired knowledge. This psychologist study how we gather, encode store, retrieve and make use of information from the environment using mental processes as perception, memory, problem

solving, reasoning, decision making, imagery an language. One of the most important area where mother tongue instructional material plays an importance role is in the cognitive development are closely related (Ramasany, 2001 in Anderson, 2011). Mother tongue as medium of instructional package leads to concept formation in learners because they are able to comprehend and regains knowledge in a language that they are familiar with and understand with, therefore they are able to perform not only in language but in other school and content based subject (Anderson, 2011)

2.2.1.2 Constructivist Theory of Leanings

Constructivist teaching is based on the belief that learning can occurs properly when learners are actively involved in a process of meaning and knowledge construction as opposed to passively receiving information. Through interaction with the physical object it is discovered that, the child physical experience heap together and he is able to conceptualized, think creatively and logically. Constructivist teaching provides critical thinking and creates motivated and autonomous learners. When the students are engaged in the learning process, then constructivist suggest the learning is likely to be more effective rather than when the student is attempting to receive knowledge passively.

Piaget's theory discuss on how learners interact with their environment in order to develop intricate reasoning and knowledge. According to Piaget, knowledge is the interaction between the individual and the environment. He assets that experimenting and manipulation of physical objects is the main way by which children learn. As children interact with their environment and new objects, they learn and develop new ideas.

Relevance of Piaget Theory in Education.

1. A focus on the process of children's thinking, not just its products. In addition to checking the correctness of children's answers, teachers must understand the processes children use to get to the answer.

2. Recognition of the crucial role of children's self-initiated, active involvement in learning activities. Instead of teaching didactically, teachers provide a rich variety of activities that permit children to act directly on the physical world.

3. Acceptance of individual differences in developmental progress. Piaget's theory assumes that all children go through the same developmental sequence but that they do so at different rates. Therefore, teachers must make a special effort to arrange classroom activities for individuals and small groups of children rather than for the total class group.

Jerome Bruner's Theory agrees with Piaget that learning is promoted by direct manipulation of object. After a learner has the opportunity to directly manipulate the object, he should be encouraged to construct visual representation, such as drawing of shape or a diagram.

Relevance of Jerome Bruner Theory in Education.

1. Make your instruction appropriate to the level of the learners. For example, being aware of the learners' learning modes (enactive, iconic, and symbolic) will help you plan and prepare appropriate materials for instruction. Or you can revisit certain topics but with the difficulty that match learners' level (spiral curriculum).

2. Use active methods in teaching. Make the students actively involved with the lesson. Initiate activities that will arouse their curiosity and interests by giving those challenging activities and exercises to them.

3. Give students the opportunity to reflect and recount their experiences. Have discussions, group sharing and dialogues.

4 Give feedback and reinforcement but more intrinsically oriented. According to Bruner, the interest in the subject matter is the best motivation to learn. Avoid giving too much emphasis on competition and grades.

2.3 Empirical Studies

Hassan (2011) carried out a research titled "Influence of Mother Tongue, Teachers Qualification, Gender and Experience on Performance in Primary School Mathematics in Katsina State". The study employed a pre-test and post-test quasi-experimental and control group design. The population of the study is 71,351 primary four pupils of which 50,265 are male and 21,086 are female. In his research random sampling were adopted to select the four schools used in experimental and control group, while stratified random sampling were used to select boys and girls. The sample of the study consisted of 200 primary school pupils (122 boys, 78 girls) in Charanchi and Rimi Local Government in Katsina State. The study involves two groups, one experimental and the other as control. Both groups participated in the pre-test and post-test those were administered in the data collection process. Five hypotheses were tested in the study. The major findings from the study were that (1). The use of mother tongue as medium of instruction enhanced the performance of pupils in Primary School Mathematics (2) Teachers experience has an impact on pupils' performance in primary school mathematics. (3) Teachers qualification and gender were not a significant factor in determining the performance of pupils in Mathematics. The results showed significant differences in performance between pupils who were taught in their mother tongue and those who were taught in a mixed language (English and Hausa). The study revealed that there was a significant difference between the performances of pupils taught by teachers with higher qualification in compared to those pupils taught by teachers with lower qualification.

Wushishi, Yusha& Hassan (2013) in a study titled Effects of Computer Assisted Instruction in Nupe Language on Pupils' Achievement in Mathematics in Bida Local Government Area of Niger State, Nigeria. The design adopted for the study was quasi experimental. Two hundred and two (202) primary school pupils from four selected schools in Bida local government area were used as research sample. The experimental group was exposed to computer assisted instruction package in Nupe language while the control group was taught the same topics with conventional method in English Language. A 40 item Primary School Mathematics Achievement Test (PSMAT) with a reliability coefficient of 0.80 was used to collect data for the study. The data were analyzed using Analysis of Variance (ANOVA). The findings of the study showed that Pupils taught mathematics with computer assisted instruction package in Nupe language performed better than those taught with conventional teaching method and gender has effect on their mathematics achievement scores. The results of Analysis of Variance (ANOVA) on the achievement of students taught Mathematics using computer assisted instruction in Nupe language indicates that there is no significant difference between the achievement of the experimental and control groups on pre-test. This showed that the pupils in the two groups had equivalent mathematics background as entry behaviour. However, the finding indicated that there is significant difference in the academic achievement of pupils taught using Computer Assisted Instruction Package in Nupe Language and those taught with conventional method using English language. The result shows that there is significant difference in the achievement scores of both males and females pupils taught CAIPNL and those taught with lecture method in English Language.

Gambari, Shittu, Daramola & Jimoh (2016) in a study entitled Effects of Video Instructional Package on Achievement of Senior Secondary School Students in Mathematics in Minna,

Nigeria. They used quasi-experimental style. The population for this study was made up of 63,256 Mathematics students in Niger State. The target population was senior secondary mathematics students in SSS class II (SSSII). One hundred and twenty (120) SSSII students were randomly selected from four senior secondary schools. a hundred and twenty students (60 male and sixty female) were indiscriminately selected from four secondary colleges that were purposively sampled supported 5 criteria. The results revealed that there's vital distinction within the mean action score of scholars educated arithmetic exploitation TO, TA, TN and TAN Video sort tutorial packages. Gender was found to own no vital impact within the mean action score of scholars' educated exploitation TO, TA, and TN.

Usman, Wushishi, Gambari & Olayinka (2018) in a study entitled Effect Of Developed Web-Based Instructional Package In Hausa Language On Academic Achievement Of Upper Basic Students In Geometry In Niger State. The study adopted descriptive survey design, Quasi-experimental design, specifically Pre-test, Post-test, non-equivalent and non-randomized control group design. Three research questions and hypotheses were formulated; three hundred and seventy-three (373) students were sampled for the study from eight (8) purposively sampled co-educational secondary schools from two zones of Niger State. The experimental and the control groups consisted of 183 and 190 students respectively. Findings on the difference in the Mean Geometry achievement scores of upper basic students exposed to Bashiwushi Futmin Lissafi and those exposed to lecture method in Niger State, revealed the students exposed to the package performed better than those taught using the lecture Method.

2.4 Summary of the Literature Reviewed

This chapter contains a review of literature about how mother tongue and video instructional package can be used to improve the achievement of student towards studying of mathematics.

Considering the low achievement and interest of student towards mathematics in Nigeria, several factor have been contributed to this problem which one of the factor include the medium of instruction using in teaching through a language that the learner do not speak and understand well from home. It is observes from the literature review that there are many factors involve in order to achieve a quality education for the student, which one of the important factor is the language used in communicating to the learner. Kioko, (2015) concludes that the use of learner home language in the classroom promotes a smooth transition between home and school.

Several researchers such as Walter &Dekker (2011), Katie (2014), Janek (2014), Kioko et al. (2015) have demonstrated that use of student mother tongue in education has greater impact not only on individual student but society as a whole.

Hassan (2011) conclude that the use of mother tongue in the teaching and learning of mathematics in primary school was effective than use of English language. Also, the advancement of the use of technology tools coupled with the mother tongue should be bought into the classroom. The use of information and communication technology as medium of instruction helps to enhance student achievement. It helps them to comprehend and retain what they have been taught by the use of Projector, internet learning, mobile learning, computer assisted instruction, video-tapes, simulation, learning classroom based instruction are examples of mediums through which these instructions can be communicated to the learners. All these medium of instruction are process in English language which needs for to be access into native language medium of instruction in order for more effectiveness used of the package to enhance the achievement and interest of the students in studying mathematics. Usman, Gambari & Wushishi (2018) concluded that using of web-based medium in Hausa language helps to improve the performance of students in mathematics at basic level of education. Wushishi, Yusha'u and

Hassan (2013) also concluded in their research, that student who are taught geometry using Computer Assisted Instruction in Nupe language performed better and (CAI) in indigenous language has greater impact in the performance of student in studying mathematics.

The above reviewed works have a relationship with the present study as they all focused on instructional package and use of mother tongue; however, the researcher observe that the related study is differed significantly from the present study in content, geographical scope, and methodology. Hence, the present study is aimed at investigating on the effect of using video instructional package in Yoruba language on cognitive performance of Junior Secondary School Students on Mathematics subject in Offa metropolis, Kwara state, Nigeria.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

This chapter describes the research design, population, sample and sampling techniques, research instrument, validity of the instrument, reliability of the instrument, method of data analysis and data analysis.

3.1 Research Design

The research design adopted for this study was a pre-test, post-test, non-equivalent, randomized control group design. The design of the study is as follows below:

Table 3.1 Research Design Format

Grouping	Pre-test.	Research Instrument	Post-test
Experimental	0_1	X	0_2
Control	0_3	--	0_4

0_1 is pre-test for the experimental group

0_2 is post-test for the experimental group

0_3 is pre-test for the control group

0_4 is post-test for the control group

X is the treatment

-- is no treatment

The variable in the study are as follows:

The schools used for experimental group received the treatment of the package, while the schools used for control group does not received the treatment of the package except the conventional method of teaching through the usage of English language. The schools for

experimental group were given pre-test before the treatment and post-test was conducted after the treatment for the experimental group.

3.2 Population

The population for this study will comprise all the Junior Secondary School in JSS 2 in Offa Kwara State, the total population of Junior Secondary School two (2) students were 5,155 consisting of 3,168 males and 1,987 females. The target population for this study comprised of four (4) Junior Secondary School in Offa, Kwara State which comprise the total number of 624 students consisting of 402 males and 222 females.

3.3 Sample and Sampling Technique

In the first stage the purposive sampling procedure was used to select four schools because of the availability of computer in those schools. The sample consist 40 students from Junior Secondary School two (2) randomly selected from four schools which were used for experimental and control group. The researcher used purposively sampling technique to select one class per school in each of the selected schools. From the sampled schools an intact class was used to select 10 students from each school.

3.4 Research Instrument

The instrument used for the study was the Awonran Imo which is the video instructional package developed in Yoruba language by the researcher, which is used for teaching measurement of location. Odinwon Arin Ifarahan Idanwo Aseyori (OAIA) was developed by the researcher to test the achievement score of the students taught using video instructional package in Yoruba language, the instrument consist of two section, section A is a bio-data which shows the name, school, class, gender of the student and section B contain multiple choice question of 4 options

each. The Measurement of Central Tendency Achievement Test (MCTAT) was developed to measure the student achievement of student taught using the conversional teaching method. The test items covered all the content of the lesson plan which were centred on the sub-topics to be taught in Yoruba language, the content were selected from the schools scheme of work developed for Junior Secondary School in Nigeria.

3.5 Validity of The Instrument

The instrument was validated by two lecturers from Educational Technology Department and H.O.D Mathematics Department Federal University of Technology Minna including the supervisor of this work expect in mathematics, test and measurement and recommendation use of language were given the instrument for face and content validity. Base on their suggestion and recommendation necessary correction were made before the final draft of the instrument.

3.6 Reliability of The Instrument

To obtain the reliability of the instrument, a pilot study was conducted. Two school was selected within the population for the study, but were not part of the target sample for the study. Ten students were randomly selected from each schools. Using Person Product Moment Correlation Analysis (PPMCA) the reliability co-efficient of 0.82 was obtained. Based on the co-efficient obtained, the instrument was consider the reliable for the study.

3.7 Method of Data Collection

The researcher used two form in collecting the data, pre-treatment stage and treatment stage. The researcher got permission letter from the Head of Department and seek permission from the school principal of the school and discussed the aim of the study.

The researcher conduct a pre-test to the students before introducing the package and after, the researcher then introduces the package and teaches the content of the topic using the video

instructional package in Yoruba language and then the researcher conduct a post-test then commenced the treatment of the result.

3.8 Method of Data Analysis

The data collected were analysis using mean and standard deviation through the use of Statistical Package for Social Sciences (SPSS) 23.00 version. The package was used to run inferential statistics using T-test analysis to test the research hypotheses at 0.05 level of significant

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

The purpose of this study was to discover the effects of using video instructional package in mother tongue (Yoruba) language on lower basic student achievement in mathematics in Offa kwara State. The research is basic on mathematics subject. The method used for the study was quasi-experimental and student achievement on mathematics was measured through the use of achievement test.

The finding from the study show that the cumulative score of student who are taught using their mother tongue (Yoruba) language in teaching mathematics in JSS II perform higher in their academic performance than those who are taught mathematics with official language using English language. Also when student achievement score in mathematics are in consideration, it was observed that the students who are taught with their mother tongue gained significantly more than those who are taught using official language. Also from the t-tests analysis, the (p-valve < 0.05) which indicated that there is no significant difference in the mean score of male and female student of JSS II students that were taught using Yoruba language.

5.2 Conclusion

In view of the major findings, this study has confirmed the effectiveness of using video instructional package in mother tongue (Yoruba) for teaching mathematics against the conventional teaching method using English language in Nigeria. Based on the finding and the result, it was concluded that using video instructional package in Yoruba language in teaching Junior Secondary School will help to improve the performance of student achievement in Mathematics. It suggests that the government policy of providing junior secondary education in

the mother tongue should also be apply at all level of education. Also video instructional package in mother tongue should also be implemented to our education since it is been observed that students learn early and retain what they are seen, the government should encourage this by providing the facilities to schools.

5.3 Recommendation

Based on the findings of this study the following recommendations had been made:

1. Awonran Imo was found to be effective for teaching mathematics, consequently the package should be used at the junior secondary school in teaching mathematics.
2. Government policy maker on education should ensure that the mother tongue is fully implemented at least at the basic level of education
3. The government should also provide schools with good facilities that will aids video package.

5.4 Suggestion for Further Studies

The following are suggested for further study;

1. Similar research works should be done in other related subject using the video and mother tongue.

2. Also, similar studies should to be carried out in other states of the country, in order to encourage the native language.

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APPENDIX A

LESSON PLAN FOR EXPERIMENTAL GROUP

SCHOOL:- Offa Grammar School, Offa.

DATE:- 10th July, 2018.

DURATION:- 1hr 10 mins

TIME:- 8:00am- 9:10am

GENDER:- Male and Female

NO. IN CLASS:- 206 Students

TOPIC:- Measure of Central Tendency

SUB- TOPIC:- Arithmetic Mean, Median and Mode.

INSTRUCTIONAL MATERIALS:- Video Instructional Package, Mother Tongue (Yoruba) Language.

ENTRY BEHAVIOR:- The student are familiar with the addition and division of numbers.

INSTRUCTIONAL OBJECTIVES:- By the end of the lesson, the student should be able to:-

1. Define mean, medium, and mode.
2. Calculate the mean of any given set of number.
3. Calculate the median of any given set of number.
4. Identified the mode of any given set of number.

INTRODUCTION:- The teacher introduces the lesson by asking the student question based on the entry behavior.

{a} find the sum of the number 2,3,4,5 and 1

{b} what is the answer of 3 divide by 15

PRESENTATION:- The teacher presents the lesson in steps as follows:

STEP 1:- The teacher defined mean.

Mean is the sum of all numbers divide by the total number.

STEP 2:- The teacher defined median.

Median is the middle number after the numbers have been arrange in order.

STEP 3:- The teacher defined mode.

Mode is the number which occurs most in a given number.

STEP 4: The teacher follow the package step by step an d explain for better understanding of the student.

Examples

1. Find the arithmetic mean of the numbers5, 4,1,2,6,3,1,2 and 1.

Solution:-

Mean $=\frac{5+4+1+2+6+3+1+3+2+1}{10}=\frac{30}{10}=3$

2. Find the mean age of 5 students whose are given in years as 7, 6, 8, 6 and 8.

Solution:-

Mean$=\frac{7+6+8+6+8}{5}=\frac{35}{5}=$ 7 years.

3. Find the median of the following scores 12, 13, 12, 14, 15, 11, 13, 15, 13 and 13.

Solution:-

Arranging the number from the smallest to the biggest

11, 12, 12, 13, 13,13, 13, 13,14, 15, 15

Median = 13

4. Find the median of the following number2, 6, 8, 5, 4, 9, 10 and 3.

Solution:-

Arranging the number from the smallest to the biggest

2, 3, 4, 5, 6, 8, 9, 10

Middle number-= 5 and 6

Median=$\frac{5+6}{2}$=$\frac{11}{2}$= 5.5

Median = 5.5

5. Find the mode the following number1, 2, 1, 3, 5, 3, 3, 4, 5, 2, 3, 1 and 4

Solution:-

Arranging the number from the smallest to the biggest

1, 1,1, 2, 2, 3,3, 3,3,4, 4, 5,5

Mode =3

6. Find the mode of the following values numbers 9,10, 9,10,12,11,12,11,11 and 11

Solution:-

Arranging the number from the smallest to the biggest

9, 9,10, 10, 11, 11, 11, 11, 12, 12

Mode = 11

EVALUATION:- The teacher evaluate the students by given them exercise to solve.

1. In 6 weeks a hen laid 6, 8, 6, 7, 5 and 4.Find the mean number of eggs laid per week.

Solution:-

Mean=$\frac{6+8+6+7+5+4}{6}$=$\frac{36}{6}$=6

Mean= 6 eggs per week

2. Find the median of the following number. 2, 10, 6, 11 and 14

Solution:-

Arranging the number in order, 2, 6, 10, 11 , 14

Median=$\frac{10+11}{2}$=$\frac{21}{2}$=10.5

3. Find the median of the numbers of girl born in hospital per week. 3, 9, 5, 11 and 7

Solution:-

Arranging the numbers in order

3, 5, 7, 9, 11

Median = 7

4. Find the mode of the car sold per day. 8, 6, 4, 6, 5, 4, 6, 7 and 4.

Solution:-

Arranging the number sold in order

4, 4, 4, 5, 6, 7 and 8

Mode = 4

CONCLUSION:- The lesson was concluded by marking their exercise then corrects their mistakes and give them assignment.

QUESTIONS.

What is a mean, median and mode of a given numbers?

Use these numbers given 2, 5, 3, 4, 6, 2, 3, 6 and 5 to find:

1. The mean of the numbers.

2. The median of the above given numbers.

3. The mode of the above given numbers.

REMARK:-

APPENDIX B

Lesson Plan for Control Group

SCHOOL:- Offa Community High School, Offa.

DATE:- 9th July, 2018.

DURATION:- 1hr 10 mins

TIME:- 10:00am –11:10am

GENDER:- Male and Female

NO. IN CLASS:- **98** students

TOPIC:- Measure of Central Tendency

SUB- TOPIC:- Arithmetic Mean, Median and Mode.

INSTRUCTIONAL MATERIALS:- No treatment

ENTRY BEHAVIOR:- The student are familiar with the addition and division of numbers.

INSTRUCTIONAL OBJECTIVES:- By the end of the lesson, the student should be able to:-

1. Define mean, medium, and mode.
2. Calculate the mean of any given set of number.
3. Calculate the median of any given set of number.
4. Identified the mode of any given set of number.

INTRODUCTION:- The teacher introduces the lesson by asking the student question based on the entry behavior.

{a} find the sum of the number 2,3,4,5 and 1.

{b} what is the answer of 3 divide by 15.

PRESENTATION:- The teacher presents the lesson in steps as follows:

STEP 1:- The teacher defined mean.

Mean is the sum of all numbers divide by the total number.

STEP 2:- The teacher defined median.

Median is the middle number after the number have being arrange in order.

STEP 3:- The teacher defined mode.

Mode is the number which occurs most in a given number.

STEP 4:- The teacher follow the package step by step an d explain for better understanding of the student.

Examples

1. Find the arithmetic mean of the numbers 5, 4,1,2,6,3,1,3, 2 and 1.

Solution:-

Mean = $\frac{5+4+1+2+6+3+1+3+2+1}{10} = \frac{30}{10} = 3$

2. Find the mean age of 5 students whose are given in years as 7, 6, 8, 6 and, 8.

Solution:-

Mean = $\frac{7+6+8+6+8}{5} = \frac{35}{5} = 7$ years.

3. Find the median of the following scores 12, 13, 12, 14, 15, 11, 13, 15, 13 and 13.

Solution:-

Arranging the number from the smallest to the biggest

11, 12, 12, 13, 13,13, 13, 13,14, 15, 15

Median = 13

4. Find the median of the following numbers 2, 6, 8, 5, 4, 9, 10 and 3.

Solution:-

Arranging the number from the smallest to the biggest

2, 3, 4, 5, 6, 8, 9, 10

Middle number-= 5 and 6

Median = $\frac{5+6}{2}=\frac{11}{2}=$ 5.5

Median = 5.5

5. Find the mode the following numbers 1, 2, 1, 3, 5, 3, 3, 4, 5, 2, 3, 1 and 4.

Solution:-

Arranging the number from the smallest to the biggest

1, 1,1, 2, 2, 3,3, 3,3,4, 4, 5,5

Mode =3

6. Find the mode of the following values numbers 9,10, 9,10,12,11,12,11,11 and 11.

Solution:-

Arranging the number from the smallest to the biggest

9, 9,10, 10, 11, 11, 11, 11, 12, 12

Mode = 11

EVALUATION:-The teacher evaluate the students by given them exercise to solve

1. In 6 weeks a hen laid 6, 8, 6, 7, 5 and 4.Find the mean number of eggs laid per week.

Solution:-

Mean=$\frac{6+8+6+7+5+4}{6}=\frac{36}{6}$=6

Mean= 6 eggs per week

2. Find the median of the following number. 2, 10, 6, 11, 12 and 14.

Solution:-

Arranging the number in order, 2,6, 10, 11 , 12 and 14

Median=$\frac{10+11}{2}$= $\frac{21}{2}$=10.5

3. Find the median of the numbers of girl born in hospital per week. 3, 9, 5, 11 and 7.

Solution:-

Arranging the numbers in order

3, 5, 7, 9, 11

Median = 7

4. Find the mode of the car sold per day. 8, 6, 4, 6, 5, 4, 6, 7 and 4.

Solution:-

Arranging the number sold in order

4, 4, 4, 5, 6, 7 and 8

Mode = 4

CONCLUSION:- The lesson was concluded by marking their exercise then corrects their mistakes and give them assignment.

QUESTIONS.

What is a mean, median and mode of a given numbers?

Use these numbers given 2, 5, 3, 4, 6, 2, 3, 6 and 5 to find:

1. The mean of the numbers.

2. The median of the above given numbers.

3. The mode of the above given numbers.

REMARK:-

APPENDIX C

Measurement of Central Tendency Achievement Test (Mctat)

NAME OF SCHOOL:

CLASS: J.S.S. 3

NAME OF STUDENT:

SEX: **MALE** ☐ **FEMALE** ☐

TICK THE CORRECT OPTION

INSTRUCTION: Answer All Questions

1. What is mean of a given numbers?

- It is the sum of given numbers divided by the total number given.
- It is the substration of given numbers divided by the total number given.
- It is multiplication of given numbers divided by the total number given.
- It is the sum of give numbers multiple by the total number given.

2. What is the arithmetic mean of the numbers. 12, 13, 10, 11, 15, 10, 14, 12 and 11.

(a) 11 (b) 12 (c) 10 (d) 13

3. For a class of 10 students, the scores on a mathematics test are as follows.

8, 10, 12, 14, 15, 9, 6, 7, 9 and 7. What the mean of the scores?

4. 15 (b) 13 (c) 10 (d) 12

4. The following are numbers of cars sold per day, 5, 2, 8, 4, 3 and 2. What is the mean of cars sold?

(a) 1 (b) 4 (c) 3 (d) 5

5. What is the mean age of students in primary 5, if their age are given as 12, 10, 11, 10, 8 and 9.

(a) 10 (b) 11 (c) 8 (d) 9

6. What is the mean of eggs laid by hen, if the hen laid the following number of egg per day 3, 2, 3, 1, 2, 1, 3, 1 and 2.

6. 1 (b) 2 (c) 3 (d) 4

7. What is a median of a given number?

(a) It is the first number after the numbers has been arranged in order.

(b) It is the middle number after the numbers has been arranged in order.

(c) It is the last number before the numbers are been arranged in order.

(d) It is the middle number before the numbers are been arranged in order.

8. what is the median of the following numbers. 2, 6, 2, 8, 5, 3, 2, 1 and 4.

(a) 5 (b) 2 (c) 4 (d) 3

9. What is the median of following scores. 16, 13, 10, 24, 36, 9 and 12.

(a) 12 (b) 13 (c) 9 (d) 10

10. What is the median age of the students age as 12, 15, 14, 17, 11, 21 and 18 in years.

(a) 11 (b) 12 (c) 15 (d)18

11. What is the median of the numbers 3, 5, 14, 10, 8 and 6

3. 7 (b) 6 (c) 8 (d) 5

12. What is the median of the car sold per week, 4, 6, 3, 7, 12, 1 and 10.

3. 1 (b) 3 (c) 4 (d) 6

13. What is the median of the cloths bought per month. 7, 10, 4, 3, 7, 12, 1 and 10.

(a) 7 (b) 7.5 (c) 6.5 (d) 6

14. What is the median of the following numbers. 7, 5, 4, 8, 10, 8 and 12.

(a) 8 (b) 4 (c) 6 (d) 10

15. What is a mode of a number?

4. It is the number that occurs most in a given numbers.

5. It is the number that occurs once in a given numbers.

6. It is the number that does not appear in the given numbers.

7. None of the above.

16. What is the mode of the following given numbers. 1, 2, 1, 3, 3, 4, 6, 5, 8, 3, 1, 4, 3 and 7.

(a) 1 (b) 2 (c) 3 (d) 5

17. What is the mode of the mark scores by students in mathematics test which are as follow.

10, 10, 5, 9, 15, 10, 20, 10, 9, 5, 9, 10 and 25.

1. 5 (b) 9 (c) 10 (d) 20

18. What is the mode of the bags sold per day. 5, 12, 8, 12, 10, 15, 5, 5, 10, 5, 8, 6 and 7.

(a) 5 (b) 6 (c) 8 (d)12

19. What is the mode of the following age of students in J.S.S 2, If their age are as follow.

11, 11, 12, 10, 13, 14, 11, 12, 13, 11, 13, 10, 12, 12, 14 and 12.

(a) 10 (b) 11 (c) 12 (d) 14

20. Which of the following number of cars sold is the mode, if the following are the numbers of cars sold per week. 15, 10, 16, 12, 20, 5, 15, 15, 12, 15 and 16.

(a) 5 (b) 10 (c) 12 (d) 15

ANSWER

1. A
2. B
3. C
4. B
5. A
6. B
7. B
8. C
9. B
10. D
11. A
12. D
13. C
14. A
15. A
16. C
17. C
18. A
19. C
20. D

APPENDIX D

Odinwon Arin Idanwo Aseyori (Oaia)

ORUKO ILEWE:

KILASI: KILASI KETA GIRAMA

ORUKO AKEKO:

EYA: **OKURIN** ☐ **OBINRIN** ☐

MO IDAHUN TI O MUJU **ASIKO: OGBON ISEJU (30 MINS)**

ITOSONA: **DAHUN GBOGBO IBEERE WONYI**

1. Kinni anpeni idaji ohunka?

(a) Ohunni aropo gbogbo awon ohunka ti a fi eya ohunka re pin.

(b) Ohunni ayokuro gbogbo awon ohunka ti a fi eya ohunka re pin.

(d) Ohunni ilopo gbogbo awon ohunka ti a fi eya ohunka re pin.

(e) Ohunni aropo gbogbo awon ohunka ati ni ilopo gbogbo awon eya ohunka re.

2. Kinni idaji awon ohunka wonyi? 12, 13, 10, 11, 15, 10, 14, 12 ati 11.

(a) 11 (b) 12 (d) 10 (e) 13

3. Ni yara ikawe,ti oni omo akeko mewa, esi idanwo ise isiro won je 8, 10, 12, 14, 15, 9, 7, 8 ati 7. Kinni idaji esiIdanwo gbogbo awonomo akeko na?

(a) 15 (b) 13 (d) 10 (e) 12

4. Awon ohunka wonyi ni mooto ti won ta ni ojumo 5, 2, 8, 4, 3 ati 2. Kinni idaji awon mooto wonyi ti won ta?

(a) 1 (b) 4 (d) 3 (e) 5

5. Kinni idaji ojo ori awon omo Ile-iwe ni kilasiikarun ti ojo ori won je 12, 10, 11, 10, 8 ati 9

(a) 10 (b) 11 (d) 8 (e) 9

6. Kinni idaji awon eeyin ti adie ye ti adie ba ye awon ohunka eeyin wonyi ni ojojumo 3, 2, 1, 3, 2, 1, 3, 1 ati 2.

(a) 1 (b) 2 (d) 3 (e) 4

7. Kinni anpeni ohunka arin?

(a) Ohunni ohunka ti o wa ni akoko leyin igbe ti awon ohunka ba ti wa ni sise tele.

(b) Ohunni ounka ti o wa ni arin leyin igba ti awon ohunka ba ti wa ni sise tele.

(d) Ohunni ohunka ti o wa ni keyin ki ohunka to wa ni sise tele.

(e) Ohunni ohunka ti o wa ni arin ki ohunka to wa ni sise tele.

8. Kinni ohunka arin awon ohunka wonyi? 2, 6, 4, 8, 5, 3, 2, 1 ati 4.

(a) 5 (b) 2 (d) 4 (e) 3

9. Kinni ohunka arin awon esi idanwo wonyi? 10, 16, 13, 24, 36, 9 ati 12.

(a) 12 (b) 13 (d) 9 (e) 10

10. Kinni ohunka arin ojo ori awon akoko wonyi? 12, 15, 14, 17, 11, 21 ati 18.

(a) 11 (b) 12 (d) 18 (e) 15

11. Kinni ohunka arin awon ohunka wonyi? 3, 5, 14, 10, 8 ati 6.

(a) 7 (b) 6 (d) 8 (e) 5

12. Kinni ohunka arin awon mooto ti won ta ni osese? 4, 6, 3, 7, 12, 1 ati 10.

(a) 1 (b) 3 (d) 4 (e) 6

13. Kinni arin ohunka awon aso ti won ra ni ose ose? 7, 10, 4, 3, 1, 6, 12 ati 8.

(a) 7 (b) 7.5 (d) 6.5 (e) 6

14. Ewo ni arin ni ninu awon ohunka won yin? 7, 5, 4, 8, 10, 8 ati 12.

(a) 8 (b) 4 (d) 6 (e) 10

15. Kinni anpeni ohunka ijeyo julo?

(a) Ohun ni ohunka ti ojeyo ju ninu ohunka.

(b)Ohun ni ohunka ti o kere ninu ohunka.

(d) Ohun ni ohunka ti ojeyo kere julo ninu ohunka.

(e) Ko si ninu awon idawun wonyi.

16. Kinni ohunka ti ojeyo julo ninu awon ohunka wonyi? 1, 2, 1, 3, 3, 4, 6, 5, 1, 8, 4, 3 ati 7.

(a) 1 (b) 2 (d) 3 (e) 5

17. E wo ninu awon esi idanwo ise isiro wonyi ni ojeyo julo? 10, 10. 5, 9, 15, 10, 20, 10, 9, 5, 9, 10 ati 25.

(a) 5 (b) 9 (d) 10 (e) 20

18. Kinni ohunka ti ojeyo julo ninu ohunka awon bagi ti won ta ni ojumo. 5, 12, 8, 12, 10, 15, 5, 5, 10, 5, 8, 6 ati 7.

(a) 5 (b) 6 (d) 8 (e) 12

19. Kinni ojo ori ti ojeyo julo ninu awon ojo ori awon omo ile-iwe wonyi? 11, 11, 12, 10, 13, 14, 12, 11, 13, 13, 10, 12, 12, 12 ati 14.

(a) 10 (b) 11 (d) 12 (e) 14

20. E wo ni ohunka mooto ti o ojeyo julo ninu awon ohunka mooto ti won ta ni ose ose. 15, 5, 5, 10, 8, 12, 6, 5, 15, 12, 15 ati 4.

(a) 5 (b) 8 (d) 10 (e) 15

IDAHUN SI AWON IBEERE

1. A
2. B
3. D
4. B
5. A
6. B
7. B
8. D
9. B
10. E
11. A
12. E
13. D
14. A
15. A
16. D
17. D
18. A
19. D
20. E

Name of Schools Use for The Research Work and their Population

Name of Schools	No. of Males	No. of Females
Offa Grammar school	127	79
Offa Community High School	63	35
Okin High School	108	56
Tawakalitu Secondary School	104	52
Total	402	222

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION
DEPARTMENT OF SCIENCE EDUCATION

Dear Sir/Madam,

Instrument Validation Form

The bearer is a student of the above named University and Department. He/She is conducting a research and you have been selected as one of those with requisite expertise to validate his/her instrument. Kindly grant him/her all necessary assistance to make the exercise a success.

Your competency and expertise was considered as factors that will serve to improve the quality of his/her research instrument. We therefore crave for your assistance in validating the instrument. The completion of the form serves as evidence that the student actually validated the instrument.

Thanks for your anticipated assistance.

Dr (Mrs) R. W. Gimba 24 SEP 2018

Head of Department (Signature, Date & Official Stamp

Student's Surname: ABDULRAUF -J. MUHAMMAD Other Names: MUHAMMED JAYE

Registration Number: 2013/1/45391BE Programme: B. TECH

Title of the Instrument: VIDEO INSTRUCTIONAL PACKAGE IN YORUBA LANG

ATTESTATION SECTION

Summary of the Remark on the Instrument: Adequate

I hereby attest that the above named student brought his instrument for validation.

Name of Attester: Dr. Rasaq O. Olayiwola

Designation: Associate Professor

Name and Address of Institution: Federal University of Technology Minna

Phone No: 08067743448 E-mail: olayiwola.rasaq@futminna.edu.ng

Signature, Date and Stamp: 25/9/2018

Please comment on the following:

1. Appropriateness of the instrument for the purpose it's designed for:
   The instrument is appropriate for the designed purpo
2. Clarity and simplicity of the language used:
   The language is clear and simple
3. Suitability for the level of the targeted audience:
   Very Suitable
4. The extent in which the items cover the topic it meant to cover:
   Topics well covered
5. The structuring of the Questionnaire: The structure of the questionnaire is good
6. Others (grammatical errors, spelling errors and others)
   —
7. General overview of the Instrument: Satisfactory

Suggestions for improving the quality of the instrument

1.
2.
3.
4.
5.

Name of Validator: Dr R O Olayiwola
Area of Specialization: Applied Mathematics
Name of Institution: FUT Minna
Designation: Snr Lecturer
Signature:
Date: 25/9/2018

Thank You

CLEARANCE FOR PROJECT

1. Name of Candidate: ABDULRAUF JAYEOLA MUHAMMED
2. Matric Number: 2015/1/45341BE
3. Please Comment on Candidates Level Work: Ready for presentation

(a) Proposed Presentation: Seminar for chapter 1-5

(b) Field Work/Data Collection: Done

(c) Data Analysis/ Presentation of Results: Done

(d) General Comments on Candidates Works: Completed work

Attestation

Dr Bashir A U
Supervisor

25/07/18
HOD, Signature/Date