KWARA STATE UNIVERSITY, MALETE, NIGERIA
SCHOOL OF POSTGRADUATE STUDIES (SPGS)

EFFECTS OF PERSONALISED AND DIRECT INSTRUCTIONS ON PUPILS' ACADEMIC PERFORMANCE IN NUMERACY IN ILORIN WEST LOCAL GOVERNMENT AREA OF KWARA STATE

Bilikis Ajoke OLASINDE
MATRIC NO: 19/37MED/00012

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BY

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In Partial Fulfillment of the Requirements for the Award of Master of Education (M.Ed) in Early Childhood Education

DEPARTMENT OF EARLY CHILDHOOD EDUCATION AND PRIMARY EDUCATION

FACULTY OF EDUCATION

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NIGERIA

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February, 2022

DECLARATION

I hereby declare that this thesis titled "Effects of Personalized and Direct Instructions on Pupils' Academic Performance in Numeracy in Ilorin West Local Government Area of Kwara State" is a record of my research. It has neither been presented nor accepted in any previous application for a higher degree.

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Bilikis Ajoke OLASINDE **Signature /** Date

APPROVAL PAGE

This is to certify that this thesis by Bilikis Ajoke OLASINDE has been read and approved as meeting part of the requirements of the Department of Early Childhood and Primary Education, Faculty of Education Kwara State University, Malete for the award of the degree of Masters (M.Ed.), in Early Childhood Education

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This thesis is dedicated to Almighty Allah for His mercy and protection.

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Abstract

Numeracy is a subject that is developed across the primary three curriculum. It has to do with reason logically, problem-solving skills and having the confidence and competence to use numbers and measures in various settings, pupils do have phobia for any subject that deal with calculation. Based on this reason, the researcher investigated the effect of personalized and Direct-instructions on pupils' academic performance in numeracy in Ilorin West Local Government Area of Kwara state. This research-work adopted the pre-test, post-test, control group quasi-experimental research design. There is, factorial design of 3X2X2 was adopted to test the null hypotheses for this study. The population of this study comprised all primary school pupils. Sample size for the study was 6 primary three classes. The multistage sampling technique was used. The purposive sampling technique was used to select mixed primary schools (Boys and Girls schools). Instruments were used to elicit information and three treatment packages: Pupils' Numeracy Performance Test (PNPT), Instructional Guide for Personalized Instruction (IGPI), Instructional Guide for Direct Instruction (IGDI) and Instructional Guide for Conventional Method (IGCM). Seven research hypotheses were formulated and tested for the study, Instruments were face and content validity by some selected Numeracy teachers in primary schools, researcher's supervisor, co-supervisor and some lecturers in the Department of Early Childhood and Primary Education, Kwara State University, Malete. Twenty five copies of the test were administered two times on primary 3 pupils in another school outside the study sample. The drafted instruments were tested two times, giving two weeks interval. Thereafter, Pearson Product-Moment Correlation (PPMC) coefficient was used to establish the reliability coefficient of 0.81. The demographic data of the participants were analyzed using frequency counts, mean and percentage, while the research hypotheses were tested, using analysis of covariance (ANCOVA) at 0.05 level of significance. *Findings showed that there was significant effect of personalized and direct instructions on pupils' academic performance in numeracy* ($F_{(2;\ 116)} = 2.584$, $P < 0.05$). *Based on the findings of the study, personalized and direct instructions can enhance better performance in numeracy than the traditional method of teaching and learning. Finally, recommendations were made, numeracy teachers should be enlightened an trained on the effectiveness of personalized and direct instructions on pupils' academic performance in numeracy, Curriculum developer in numeracy like, Federal and State Ministries of Education, school proprietors and Nigerian Educational Research should incorporate personalized and direct instructions into the curriculum as one of innovative strategies that would be used to teach numeracy especially in primary schools.*

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CHAPTER ONE
INTRODUCTION

Background to the Study

Numeracy is the ability to think rationally with the application of simple numerical concepts. The basic numeracy skills encompass understanding, fundamental arithmetic like addition, subtraction, multiplication, and division. For example, if one can comprehend simple mathematical equations such as 2 + 2 = 4, then one would be deemed to possess at least basic numeric understanding. Substantial aspects of numeracy also include number sense, operation sense, computation, measurement, probability and statistics. A numerically literate person can deal and respond to the request of life mathematically (Brooks, 2010).

Mathematics is a compulsory and inevitable subject in primary school curriculum that occupies a conspicuous position among the branches of knowledge in any educational institution. It is the mainstay to all science subjects in school, playing a prominent role in the revitalization of nations and peoples, towards the progress, growth and prosperity of earlier civilizations, as well as the current era (Farrajallah, 2017). Regular poor academic performance by most of the pupils in numeracy is regularly connected to the ineffective teaching methods by teachers who impart knowledge (Adunola, 2011). Other causes of poor performance in numeracy among school pupils include misconception of the subject numeracy as difficult one, fear and anxiety. Attwood (2014) attributed poor performance in Numeracy to parental attitude, interrupted teaching, and

dyscalculia. Karue and Amukowa (2013) pointed out that lack of meaningful library and laboratory, qualified teachers, home environmental factors and family backgrounds as well as little participation of parents in the education of their children as the main causes of poor performance in mathematics. In building a nation rightfully among other developed nations, needs to focus on mathematics, science and technology are very essential (Akudo, Olaoye, Alabi & Otun, 2017).

In spite of mathematics importance, mathematics education suffers from apparent deficiencies in teaching and learning instruction as the students' attitude towards mathematics remain a great challenge for the educators. In the recent year, studies had shown that pupils do have phobia to any subject with calculation. As a matter of fact, mathematics requires a planned learning instruction that would allow students' active participation in mathematics classroom such as personalization of instruction in mathematics. To facilitate participation of students, personalization as an instructional-design has been introduced to allow learners to convert textual information to familiar referents. It has been established that two of the cooperative learning/ strategies which gives more time for pupils to think to improve their responses and facilitates pupils to acquire higher level thinking skill from their peers are Personalised and direct instructions. Specifically, Personalization of instruction and learning is the effort on the part of a school to take into account individual student characteristics and needs, and flexible instructional practices, in organizing the learning environment.

Bates and Wiest (2004) opined that personalization increases motivation of learners in mathematics classroom. This was also supported by Cakir and Simsek (2010) that see personalization of instruction a tool for learning that affects student achievement positively. Awofala (2014) revealed that pupils who were thought using Personalised instruction had higher levels of self -confidence, liking, usefulness, and motivation but recorded low level of anxiety regarding mathematics word problems compared with the non-personalised group students. Another study had been conducted by Akinsola and Awofala (2009) who both revealed that 320 senior secondary students in Nigeria, had shown significant different results due to the use of Personalised print-based instruction and gender difference. Personalization of instruction and learning is the effort on the part of a school to take into account individual student characteristics and needs, and flexible instructional practices, in organizing the learning environment. Many researchers have carried out studies on Personalised instruction but to the researcher's knowledge there is no empirical study on both Personalised and direct instructions in the researcher locale

Gagnon and Maccini (2011) suggested that direct instruction is a specific method of teaching that focuses on what to teach in respect to the design of the curriculum and how to teach which focuses on specific teaching techniques. Direct instruction has six teaching functions which include review of previously learned skills and homework; presentation of the general principles of the new materials in a clear and organized manner; guided practice of new lesson taught with supervision of the teacher; correction and feedback to reduce students' errors; independent practice to monitor

performance and provide additional explanations or re-teaching as needed; and weekly and monthly reviews for addressing and maintenance of skills acquired by the students (Gagnon & Maccini 2011; Moore, 2011) . The researcher intended to use moderating variables of gender and school type, school type was not considered in the previous studies

Gender is a specially constructed phenomenon. Such that society ascribes different roles, duties, behaviours, and mannerisms on the gender (Nnamani & Oyibe, 2016). Gender connects to cultural attributes of both males and females (Nnamani et al 2016). Gender, according to Nnamani et al (2016), is a psychological experience of being a male or a female. They also opined that gender is defined as socio-cultural construct that connotes the differentiated roles and responsibilities of male and female in a specific society. This definition connotes that gender dictates the role which one plays in connection to general political, cultural, social and economic system of the society. According to Nnamani et al (2016), gender refers to all the attributes of male and female which a specific society has dictated and given each sex.

Also, Nnamani and Oyibe (2016) sees gender as the dichotomy of roles culturally imposed on the sexes, and maintained that because of biological differences in human make-up such as those between man and woman, people presume that one sex may have a learning edge over the other. Intrinsically, there is practically no significant differences in the intelligence between male and female that is traceable to gender differences. He argued that the fact that men are seen as the dominant and even superior sex does not mean that they are artistically better than women. It has

become a general feeling or stigma that mathematics is a boy's domain. A study through a meta-analysis shows that males tend to perform better in mathematics tests that involve problem-solving (Hyde & Mertzb,2009) while females tend to perform better in computation, and there is no significant gender difference in understanding mathematics concepts.

Another study conversely showed that females tend to earn better grades than males in mathematics. Another variable of impotence to the study is school type. Public and private schools are institutions owned as the names connotes. Public school in Nigeria have federal, state, and local governments as their proprietors the private schools have individuals, associations or organisations as their owners. Olatoyo and Olasehinde, (2014) maintained that private schools vary widely and the level of parental participation differs from one private school to the other. What is important for a parent is to choose a private school that has characteristics that match what he/she is looking for. Parents pay for the cost of educating their children in private schools and therefore tend to be more engaged in determining what the schools offer than parents whose children are in the public schools (Olatoye & Agbatogun, 2009). For instance, Bibby and Peil (2006) noted that children who attended private primary schools performed better than pupils in public schools.

This view is also supported by Lioyd (2006) as he contended further that the public schools which saw education as good thing, tended to leave the question of educational success or failure in the hands of the public and their parents. In spite of these, the problem of pupils' poor academic performance in numeracy skills persists. This creates a researchable gap in knowledge, the gap

which research intends to fill by examining the effects of personalised and direct instructions on pupils' academic performance in Ilorin West Local Government Area of Kwara State, Nigeria.

Statement of the Problem

Numeracy is a subject that is developed across primary three curriculum. It has to do with logical reasoning, problem-solving skills and having the confidence and competence to use numbers and measures in various settings. It is one of the major subjects offered at the primary school level. Poor performance in numeracy at this level of education might be as a result of inadequate and inappropriate use of classroom practices by the teachers. This has been a source of focus to all stakeholders in education more especially because numeracy is a major subject in schools. In the recent year, studied have shown that pupils do have phobia in any subject that has to do calculation. While theoretical and empirical evidences on the learner-centred method of teaching have been documented in Numeracy across the globe, empirical evidence on some of these innovative strategies (Personalised and direct instructions) in this study is not many. To the best of researcher's knowledge, there seems to be no documented empirical evidence on the effect of personalised instruction on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State, Nigeria. Although some researchers have worked on other strategies such as guided discovery and problem-solving strategy, relationship between children's constructive play activities, spatial ability, mathematical word and problem-solving performance. In spite of these efforts, the problem of pupils' poor academic performance in numeracy skills persists. This creates a researchable gap in knowledge, the gap which research intends to fill by examining the effects of personalised and direct instructions on pupils' academic performance in Ilorin West Local Government Area of Kwara State, Nigeria.

Purpose of the Study

The purpose of this study is to examine the effects of Personalised and direct instructions on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State. Specifically, the objectives are to determine the:

1 Main effects of treatment on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

2 Gender on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

3 School type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

4 Interaction effect of treatment and gender on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

5 Interaction effect of treatment and school type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

6 Interaction effect of gender and school type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

7 Interaction effect of treatment, gender, and school type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

Research Hypotheses

The following research hypotheses are formulated for the study;

$H_0$1: There is no significant main effect of treatments on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

$H_0$2: There is no significant effect of gender on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

$H_0$3: There is no significant effect of school type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

$H_0$4: There is no significant interaction effect of treatments and gender on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

$H_0$5: There is no significant interaction effect of treatments and school type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

$H_0$6: There is no significant interaction effect of gender and school type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

$H_0$7: There is no significant interaction effect of treatments, gender, and school type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

Significance of the Study

The findings of this study might be of benefit to classroom teachers, pupils, parents, curriculum planners, educational administrators, policy makers and other stakeholders in education. The outcome of study would be made available to the teachers at both public and private libraries and online after the publication for reading and to understand how effective the Personalised and direct

instructions are in the teaching and learning of Numeracy at the primary school level. The findings may be of great help to the pupils in the development of their critical thinking, creativity, social and intellectual abilities. Parents would also benefit from the findings of this study by organising workshop with them as to have a clear understanding of the effect of Personalised and direct instructions in the development of the whole child both in school and at home.

The policy maker might be able to identify areas of concern and address them in the best interest of the pupils. Also, the school management and administration may also benefit from the study because findings may challenge them to change their method of content delivery. The findings of this study will be of great guide to other researchers who want to further their research in the areas relating to effects of Personalised and direct instructions on the academic performance of pupils in Numeracy.

Delimitation of the Study

This study investigated the effects of Personalised and direct instructions on pupils' academic performance in numeracy. The moderator variables involved are gender and school-type. The reasons for involving gender and school type were to know if both will have effects on pupils' academic performance in Numeracy The study covers six primary schools (three public schools and three private primary schools) using primary three pupils in Ilorin West Local Government Area of Kwara State.

Operational Definition of Terms

The following terms are defined operationally:

Personalised Instruction: it is a way whereby teacher using explicit techniques to teach a specific skill to their pupils

Direct Instruction: this is the instruction in which the pace of learning and instructional approach are optimized in line with the needs of each learner

Academic Performance: this is the result of pupils' assessment in Numeracy which will be measured using Numeracy Performance Test between 39% for fail and 40% and above for pass

Numeracy Content Based: is the ability of the pupils to use simple numerical concept like addition of numbers, multiplication, division and subtraction of number using Personalised and direct instruction

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter focuses on review of relevant literature related to the concept of Personalised and direct instruction on academic performance of pupils in Numeracy. The review is done under the following sub-headings:

Theoretical Review

Ecosystem Theory by Bronfenbrenner 1979

Lev Vygotsky's theory of Social constructivism (1978)

Conceptual Review

Concept and Objective of Primary Education

Concept of Numeracy

Concept of Personalised Instruction

Concept of Direct Instruction

Empirical Review

Personalised Instruction and Academic Performance in Numeracy

Direct Instruction and Academic Performance in Numeracy

Pupils' Gender and Pupils Academics Performance

Pupils' School Type and Academic Performance in Numeracy

Appraisal of the Literature Reviewed

Theoretical Review

The study would be guided by the ecological systems theory which is presented as opinions, views and arguments of scholars.

Ecological Systems Theory of Bronfenbrenner 1979

How is a child's development affected by his or her social relationships and the world around him? Ecological systems theory provides one approach to answering this question. Urie Bronfenbrenner developed the ecological systems theory in 1979.

This theory focuses on the development of a child within the context of the system of relationships that form his or her environment. Bronfenbrenner's theory explains complex layers of background, each of which affects the development of the child. This theory has recently been renamed "bioecological systems theory" to emphasize that a child's biology is a primary environment fueling her growth. The layers identified by Bronfenbrenner are interdependent as changes or conflict in any one layer will reflect throughout other layers. To study a child's growth then, we must consider the immediate environment and also the child's interaction with the broader context as well. The layers identified by Bronfenbrenner are; the microsystem, the mesosystem, the ecosystem, the microsystem, and the chronosystem, the first three layers is mainly related to the study.

a. The Microsystem

The first layer as direct and close contact with the child. The microsystem solely deals with the relationships and interactions that a child has with the family, school, peers, neighbourhood or a childcare centre. The impact exhibited in the microsystem is in two ways, i.e. towards the child

and away from the child. A parent thus affects the beliefs of the child, and the child affects theirs. (Rogoff, 2003). Structures in the microsystem include; family, teachers, neighbours, friends, and other people who have direct contact with the child. These relationships impact the child in two directions; away from the child and toward the child. Bronfenbrenner referred to these bi-directional influences. This layer is the most critical layer of all the segment identified by Bronfenbrenner as it has a direct impact on the child.

b. The Mesosystem

Through this layer, a connection between the two structures existing in a child's microsystem is provided (Berk, 2004). This layer involves the relationships between the structures of the microsystem in one's life. For example; the family experience of a child may be related to the child's school experience. The connection between teacher and parent is an example of how the mesosystem brings two structures of the microsystem together.

b. **The Exosystem**

This layer represents the extensive social system surrounding the child in which the child is not directly involved in its function. Structures existing in the exosystem indirectly impact on the development of the child due to the direct interaction of the structures existing in the microsystem (Kail & Cavanaugh, 2007). Parent workplace schedules or community-based family resources are examples. The child may not be involved directly at this level, but he does feel the positive or negative force engaged with the interaction with his system. It means that the parents can transfer the experience they had at work to their children when they get back home, which can either be positive or negative.

c. The Macrosystem

This layer is the child's environment outmost segment, and this layer encompasses the cultural values, laws as well as the customs prevalent in the background. The effects exuded from this layer constitute a cascading influence on all the other layers (Santrock, 2007). This layer comprises of the child's cultural environment in which the child lives and all other systems that affect them. Examples could include the economy, cultural values, and political policies. This layer refers to the relationship between a child's cultural values and other segments. For example, if it is the belief of the culture that parents should be solely responsible for raising their children, that culture is less likely to provide resources to help parents. These, in turn, affect the structures in which the parents function.

d. The Chronosystem

This layer encompasses the all-important time dimension concerning the child's environment. The elements present in this system cover both the internal and external factors. External components are, for instance, the death of a parent while internal factors include the physiological changes exhibited when a child is ageing (Rogoff, 2003). This layer encompasses the dimension of time as it relates to a child's environments. It includes the transitions and shifts in the lifespan of the child. Elements within this system can be either external such as; divorce of parents, the timing death of parents, or internal such as; physiological changes that occur with the growth of children.

Bronfenbrenner's (1979) ecological theory is relevant to this study because of it, emphasize on the interaction of a child with the environments, each layer is essential to the child as each layer can either have a direct or indirect impact on the child (that is through the parents or other environments like the school).

Theory of social constructivism

The study was guided by Lev Vygosky theory of social constructivism which was presented by different opinion, views and arguments of scholars. Lev Vygoky propounded his theory of social constructivism in the year 1978. He Emphases on central importance of social factors, Vygotsky considered the child to be primarily an apprentice who learns the acceptable behaviors directly from social interaction with more knowledgeable peers. In addition to parents, other adults and older children who provide essential support within a cultural environment. According to Vygotsky, children have zones of proximal development representing all the skills and knowledge children alone cannot presently understand, but are potentially capable of learning through some form of support and guided social interactions.

The work of Lev Vygotsky (1934) has become the foundation of several researches and theories in cognitive development over the past several decades, particularly of what has become known as Social Development. Vygotsky has developed a socio-cultural approach to cognitive development. He places considerably more emphasis on social factors contributing to cognitive development. Vygotsky states that cognitive development stems from social interactions from guided learning within the zone of proximal development as children and their partner's co-construct knowledge. (Turuk, 2008).

Vygotsky (1978) sees the Zone of Proximal Development as the area where the most sensitive instruction or guidance should be given - allowing the child to develop skills they would then use on their own - developing higher mental function Vygotsky also views interaction with peers as an effective way of developing skills and strategies. He suggests that teachers use cooperative learning exercises where less competent children develop with help from more skillful peers - within the zone of proximal development. The conclusion being that guided learning within the ZPD led to greater understanding/performance than working alone (discovery learning). Vygotsky

bobbed up with a rich, multi-layered theory through which he considered a range of subjects including the psychology of art, language and thought, and learning and development, including rivets on the education of pupils with special needs. Vygotsky identified the greater socio-cultural context.

However, Vygotsky also places emphasis on the social environment as an enabler of development and learning (Tudge & Scrimsher, 2003). Vygotsky (1896) stated that human mind is fabricated through a subject's interactions with the world and is an attribute of the relationship between subject and object (Verenikina, 2010). He finds a significant role in humans' apprehending of the world and of themselves. These actions are ascribed as 'tools' (Turuk, 2008). Furthermore, Vygotsky averred that humans do not act directly on the physical world without the intercessor of tools. These instruments can be any artifacts, whether symbolic or signs, made by human under particular cultural and historical circumstances carrying with them the features of the culture in question (Turuk,2008). He argued that mental processes could only be understood if we get the picture the tools and marks that arbitrate them (Verenikina, 2010).

According to Vygotsky, a child is completely dependent on other people in their early stages as the socio-cultural environment keeps on showing the child with a various tasks and demands, occupying the child in his world. These other people, especially parents who apprise the child on what to do, how to do it, as well as what not to do; originating the child's action. Parents, as representatives of the culture and the medium through which the culture passes into the child, actualise these directions primarily through language. Vygotsky further explicates that children appropriate these cultural and social heritages by acquiring knowledge through interactions with people as the first step (referred to as inter-psychological plane) and then later understands and interiorise this knowledge with own personal value to it (referred to as intra-psychological plane)

(Turuk, 2008). This modulation from social to personal holding is not seen as a mere copy; rather it is a transmutation of what had been learnt through interaction, into personal values. In addition, Vygotsky arrogates that, in schools also; pupils are not copying the teachers' capabilities but transforming what teachers present them during the processes of annexation (Turuk, 2008).

Vygotsky accented that children and adults are both active agents in the process of child's development. Cole and Cole (2001) mentioned that development in this regard is co-constructed. When applied to teaching it means that both the teacher and the pupils are seen as active agents in pupils' learning. The teacher's intervention in pupils' learning is necessary, but it is the quality of the teacher-pupil interaction which is considered as crucial in that learning (Verenikina, 2010). The theory emphasises the essence of what the learner conveys to any learning environment as an active meaning-maker and problem-solver (Turuk, 2008). It admits the dynamic nature of the reaction between teachers, learners and tasks, and provides a perceptive of learning as arising from interactions with others. Steiner and Mahn (1996) stated that Vygotsky's theory takes-on that learning arises not through interaction, but in reciprocal action. A learner first succeeds in performing a new task with the aid of another resourceful person and then incorporates this task so that they can practicalise it on their own. In this way, social interaction is propounded to intercede learning. According to Ellis, the theory goes farther to say that interactions which finally intermediate learning are those in which the learner discover the new project (Turuk, 2008). Vygotsky developed Zone of Proximal Development (ZPD) in 1896-1934. The ZPD seen as the difference between what a learner can do without help and what he or she can attain with guidance and motivation from a skilled partner. Hence, the term ‘’proximal’’ refers to those skill learner is close to mastering. The zone of proximal development has been defined as the gap between certain developmental level as compelled by independent problem solving and the level of potential

development as driven through problem solving under adult guidance, or working together with more knowledgeable peers (Vygotsky, 1978). The ZPD is a moving goal.

The social constructivism theory is relevant to this study because it gives pupils freedom to build knowledge for themselves. From all aims and evidences, it resulted in the development of pupil-centered strategy such as think-pair-share and jigsaw method of teaching which forms the pivotal to this survey**.** Some of the fundamental assumptions of the social constructivism theory focused on learning construction which has to do with the process and building of internal representation and sharing of personal experience through active involvement in the acquisition, organization and evolution of knowledge, skill through experience. Conceptual growth emanated from the interaction with others and sharing of multiple perspective of their internal representation with the help of real-world situation that based on the consolidation of learning experience

The educational application of Vygotsky's theories is relevant to instructional concepts such as "scaffolding" and "apprenticeship," in which a more skillful or advanced peers helps to structure or arrange a task, so that children can acquire socio-emotional developmental skill through social interactions successfully. Any child raised with parents, peers and cared in a conducive environment are able to respond with love, understanding, and clear common-sense guidance, has a chance of learning how to relate to other people. First the child discovers other people make you happy, are fun to be with and they will look after you. Then later, the child learn that others have needs and rights of their own, and that, by studying the feelings of these others, it's possible to make them happy too. So begins the child's pathway to being at ease with himself and with others, which generally leads to the development of a confident and articulate adult, who can be independent and yet also respect other people.

Vygotsky's theories also feed into the current interest in collaborative/team work learning, suggesting that group members should have different levels of ability so more advanced peers can help less advanced members to operate within their Zone of Proximal Development thereby supporting children to relate well and interacts peacefully with their peers. The theory is very essential to the independent learning and development through critical- thinking and creativity which is appropriate to social-cultural and individual rightness of the pupils. Self-discovery through the exploration of the environment and problem-solving skills that brings about the acquisition and organization of knowledge on particular concepts through experience. It also reciprocate learning, experiences through acculturation and socialization while working with peers.

Concept and Objectives of Primary Education

Primary Education according to the National Policy on Education (2013), is the education given in an educational institutions for children aged 6 to 11 plus. Since the rest of the education system is built upon it, the primary level is the key to success or failure of the whole system.

The goals of primary Education are as follows:

1. Include permanent literacy and Numeracy, and ability to communicate effectively, primary education provide the recipient with the opportunity to be able to read and write, they were taught the ability to use language effectively in and outside the school environment. They were exposed to the use of numbers and letters that will be useful for them on daily basis as they interact with people and become reasonable member of the society.
2. Primary education lays a sound basis for scientific and reflective thinking, science at the primary school level nurture curiosity by allowing pupils to ask question and develop the skills they need to answer those questions because by nature children are naturally curious.

Children were given the opportunity to investigate into actions and find out the solutions to the identified problems thereby promote the scientific thought in them.

3. Another goal of primary education is to give citizenship education as a basis for effective participation in and contribution to the life of the society. At the primary school level, pupils are exposed to citizenship education so they can become a successful learners, confident individuals and responsible citizens who make a positive contribution to the society. Pupils were exposed to their rights as well as the responsibilities they owe the society, they were exposed to culture and the need to live and appreciate the cultural diversity, though our tribe and tongue may differ but we are still one nation.
4. Mould the character and develop sound attitude and morals in the child: primary education is not meant to be able to read and write alone but to develop in the recipient a positive attitudes towards others. Primary education is structured in such a way to allow the learners develop sound attitude by showing respect to others, maintaining integrity, honesty, empathy towards others. The teacher should therefore endeavor to be a good role model for their learners to emulate as children do what they see us doing.
5. Develop in the child the ability to adapt to the child's changing environment: primary education promotes adjustability in the child by ensuring that the environment is stimulating and appealing and they will be guided to behave in a way that is acceptable in the school by encouraging them to follow the laid down school rules and regulations which will later help them later in live to be able to cope with an environment they find themselves.
6. Give the child the opportunities for developing manipulative skills that will enable the child function effectively in the society within the limit of the child's capacity, primary education

is meant to produce independent and self reliant learners by providing them with different skills which will help the learners to be employers of labour after graduating, hence promote independent.

7. Provide the child the basic tools for further educational advancement, including preparation for trades and crafts of the locality. Primary education provides the recipient with the needed tools that will be needed by the learners as they progress as primary education is the foundation on which the later educational knowledge will rest. Parents should endeavor to enable their children have access to qualitative primary education as it determines who they are in future. All what the primary school pupils will learn in the school must be tailored towards achieving the above goals.

Concept of Numeracy

Young children develop ideas about numeracy in the course of their day-to-day lives quite naturally and without recognizing them as such. As opposed to the general and wrong thinking of children being too small to understand numerical concept and engage in numerical activities, Copple, (2010) notes that young children continually construct numerical ideal based on their experiences with the environment, their interaction with adults and other children, and daily observations. Thus, in the past 25 years, as the intuitive, informal numerical knowledge of young children often surprises early childhood teachers (Copple,2010), Studies of the development of early numerical have switched from looking at what pre-school children cannot do to what they can do. Consequently, numeracy has risen to the top of education agenda in the way that language and literacy did a decade earlier, and evidence suggests that early numeracy may be an even better predictor of school achievement than early literacy (Stipek, shoenfeld, &Gomby, 2012).

The National Council of Teachers of Mathematics (NCTM) standards (2002) define five content area: number and operations, geometry, measurement, algebra, and data analysis and probability and also defines five standard process: problem solving, reasoning and proof, connection, communication, and representation. Problem solving and reasoning, as the position statement phrases it, are the heart of numeracy:

While content represents "the what "of early childhood numeracy education, the process… make it possible for children to acquire content knowledge. These processes develop over time and when supported by well-designed opportunities to learn. Children's development and use of these processes are among the most long lasting and important achievements of numerical as the children reflect on them, represent them in various ways, and connect them to other ideas National Association for the Education of Young Children (NAEYC).

Concept of Personalised

Personalization of instruction and learning is the effort on the part of a school to take into account individual student characteristics and needs, and flexible instructional practices, in organizing the learning environment. Teachers committed to personalizing instruction help their students develop personal learning plans, assist in diagnosing their cognitive strengths and weaknesses and other style characteristics, help adapt the learning environment and instruction to learners' needs and interests, and mentor authentic and reflective learning experiences for their students (Keefe & Jenkins, 2000).

National Educational Technology Plan (2010) defined Personalised learning as adjusting the pace of instruction (individualization), adjusting the instructional approach (differentiation), and connecting instruction to the learner's interests and experiences. This definition clarifies that personalization is broader than individualization or differentiation, in that it affords the learner a

degree of choice about what is learned, when it is learned, and how it is learned. ED views this concept as having broad implications for educational success. Richard Culatta, formerly the director of ED's Office of Educational Technology, has noted, "Personalised learning may be the most important thing we can do to reimagine education in this country" (2013).

Awofala (2014) revealed that personalised instruction students had higher levels of selfconfidence, liking, usefulness, and motivation but recorded low level of anxiety regarding mathematics word problems compared with the non-personalised group students. Another study had been conducted by Akinsola and Awofala (2009), revealed that 320 senior secondary students in Nigeria, had shown significant different results due to the use of Personalised print-based instruction and gender difference.

Concept of Direct instruction

DI confronts head-on the fact of real differences in students' background preparation and the right of all students to achieve. It does this by providing instruction tailored to the identified strengths and needs of the students. Therefore, all students have a maximum chance of learning all the material. All can succeed (2001). Direct Instruction's emphasis on student assessment not only ensures individually appropriate instruction, but also student mastery. Coupled with the guided practice and review intrinsic to its sequenced curriculum, Direct Instruction's system of assessment guarantees fluency rather than mere familiarity with the material and skills taught (Kozloff, et al., 2001).

According to Wikipedia (2010), Direct instructional strategy is an educational technique that challenges the mantras of modern bureaucrats and shows that even the most disadvantaged children can excel, if only the schools will teach them‖. He described direct instruction as a rigorously developed, highly scripted method of teaching that is fast-paced and provides constant

interaction between students and the teacher. Moreover, Gagnon and Maccini (2011) posit that direct instruction is a specific method of teaching that focuses on what to teach in respect to the design of the curriculum and how to teach which focuses on specific teaching techniques.

Direct instruction has six teaching functions which include review of previously learned skills and homework; presentation of the general principles of the new materials in a clear and organized manner; guided practice of new lesson taught with supervision of the teacher; correction and feedback to reduce students‘ errors; independent practice to monitor performance and provide additional explanations or re-teaching as needed; and weekly and monthly reviews for addressing and maintenance of skills acquired by the students (Rosenshine and Steven, 1986; Rosenshine, 1996; Gagnon and Maccini 2011)

Kozloff, LaNunziata, Cowardin, and Bessellieu (2000), posit that direct instruction was propounded by Siegfried Engleman, Carl Bereiter and Wes Becker who all worked with disadvantaged children (Becker & Carnine, 1981; Bereiter & Engelmann, 1966). Direct instruction has been and developed for over four decades now for the teaching elementary through secondary language, reading, mathematics, history, higher-order thinking (reasoning), writing, science, Numeracy and legal concepts (Adams & Englemann, 1996). According to Valiathan (2009), Direct Instruction is used to describe learning material in which the teacher or expert transmits information directly to learners structuring learning time to reach a clearly defined set of objectives as efficiently as possible.

Direct Instruction according to Binder and Watkins (1990) is based on the assumption that disadvantaged children can catch up with their more affluent peers if they are provided with effective and efficient instruction‖. The main purpose of a direct instruction is to meet the unique needs of low achievers or students who are struggling in school or students with special needs. It

is a teacher-directed teaching method. It is meant to accelerate student progress, which is to bring students to mastery of subject taught as quickly as possible. Direct Instruction realizes the goal of teaching more in less time by using teaching procedures that maximize the time students spend in instruction and by developing materials that seek (whenever possible) to teach a ―general case.‖ A general case strategy is one that uses the smallest possible number of examples to produce the largest possible amount of learning.

Empirical review

Personalised instruction and academic performance in Numeracy

Romiro,(2021) investigated the effects of Personalised instruction on the academic achievement of students in Physics. A total of 78 students in Physics 1 (Mechanics and Heat) enrolled in the first semester, SY 2008 – 2009, were used as subjects of the study. An analysis of their learning history in College Algebra and Trigonometry was conducted as basis of determining the mathematical abilities of the students. A pre-test was conducted to determine the initial learning schema of the respondents. The examination used as pre-test was formulated by the author as his output in his dissertation and was field tested to a group of students majoring in science at Quirino State College. Personalization in instruction was introduced through a Personalised modular instruction (in terms of content and procedure) followed by exercises/drills. Students were engaged in active learning through direct instruction using the Mayer's model from the teacher, small group discussion, peer mentoring and follow-up session/s by the teacher. Analysis of transcripts was done to determine the extent of learning of the respondents and the remediation to be implemented.

After the execution of the lessons for a semester, the students were given a post-test. It was found out that the students who were exposed to the constructive learning environment through Personalised instruction performed better in their academic achievement in Physics: a highly

significant effect on the academic performance of the students and a moderately high impact model of variability (72.7 %) in their academic achievement.

This study examined the effect of personalised instruction on students' learning outcomes and attitude in mathematics education at senior secondary school, Lagos State, Nigeria of quasi-experimental design of two non-equivalent groups with sample comprised 177 students from two public secondary schools. Two research instruments were used, achievement test and questionnaire with reliabilities coefficients of 0.84 and 0.78 respectively. The data were analysed using both descriptive statistics (mean, standard deviation and bar chart) and inferential statistics (T-Test and ANCOVA) which were used for research questions and in testing the hypotheses at 0.05 level of significance respectively. The finding revealed positive effect of personalised instruction on students over non-personalised students and male over female also when considering in terms of gender on attitude. Furthermore, H01, [t= 0.93; p>0.05] is not rejected; H02, pretest value of F(1, 176) = 131.214; $p < 0.05$; posttest value of F(1, 176) = 30.998; $p < 0.05$ is rejected; H03, gender value of F(1, 176) = 0.005; $p > 0.05$ is not rejected; and H04, interaction value of F(1, 176) = 1.362; $p > 0.05$ is not rejected. Conclusively, personalised instruction on students has positive effect towards students learning outcomes and attitude in mathematics classroom, Alabi,(2020)

Awofala (2014) revealed that personalised instruction students had higher levels of self - confidence, liking, usefulness, and motivation but recorded low level of anxiety regarding-mathematics word problems compared with the non-personalised group students. Another study had been conducted by Akinsola & Awofala (2009), revealed that 320 senior secondary students in Nigeria, had shown significant different results due to the use of Personalised print-based instruction and gender difference.

Direct instruction and academic performance in Numeracy

This is a quasi-experimental research designed to determine the effects of Direct and Indirect instructional strategies on Mathematics achievement among junior secondary school students. The population consisted of students in a Public Secondary School in Owerri, Imo State. A sample of 102 students from two (2) intact classes (A & B) was drawn using simple random sampling (Balloting) on class basis. Group A students were taught Mathematics using Direct Instructional strategy, while Group B students were taught using Indirect Instructional strategy. The treatment lasted for 10 weeks of 20 sessions. Three research questions and three null hypotheses guided the study. Mathematics Achievement Test (MAT) was administered on the subjects at the end of treatment. The MAT was validated and its reliability test produced co-efficient of 0.86. Data collected were analyzed with Mean (x), Standard Deviation (SD), t-test analysis. Results got after data analysis indicated that direct instructional strategy has a better effect on students achievement in Mathematics compared to indirect instructional strategy; significant difference existed between direct and indirect instruction on students achievement in Mathematics; and gender is a significant factor in determining the effect of direct and indirect instructional strategy on students‟ achievement in Mathematics, in favour of the males. Based on these results, recommendations were made for the adoption of direct instructional strategy in teaching Mathematics in secondary schools, Oladayo (2012).

This study was aimed at investigating the effect of the direct instruction model on intermediate class achievement and attitudes toward English grammar. It was an experimental study and the purpose was to explore the relative effectiveness of instructional methodology (independent variable) on students' achievement and attitude (dependent variables). This study is based on Slavin's (1987) components of Direct Instruction. Direct Instruction (DI) refers to academically focused, teacher-directed classroom instruction using sequenced and structured materials. It refers

to teaching activities where goals are clear to students, time allocated for instruction is sufficient and continuous, and feedback to students is immediate and academically oriented. On the other hand, in traditional lessons, the instructor verbalizes information to passive note-taking by students.

The instructor thinks that students have empty minds which are to be filled with knowledge. Students are expected to record and absorb knowledge (Slavin, 1994). In Pakistan, this approach is still unfamiliar to practitioners and researchers in education, including teachers of Numeracy at the intermediate level. The main objectives of the study were: 1) to measure the achievement of the experimental and control groups after providing treatment of direct instruction to the experimental group, 2) to measure the attitude of the experimental and control groups after providing treatment of direct instruction to the experimental group, 3) to compare the achievement of the experimental group with the control group after experiment and to compare the high achievers and low achievers of the experimental and control group, 4) to compare the attitude of the experimental and control groups toward English grammar after providing treatment of direct instruction, and 5) to compare the effect of direct instruction on the retention of students in English grammar. To achieve the above-mentioned objectives, null hypotheses were formulated and tested. The sample of the study comprised of 52 first year students who were matched on their ability in English grammar and placed into an experimental group or control group on the basis of specially-designed pre-tests. The study was conducted in Cantt College for Women Wah Cantt.

A valid and reliable pre-test and post-test in English grammar were developed to measure the achievement of students in English grammar. An attitude scale was developed to measure the attitude of the students toward English grammar, and it was administered before and after the treatment. The experimental group was taught through direct instruction and the control group was

taught, as usual, through the traditional approach for a period of three months. Chi-square and t-tests were applied to test the null hypotheses, and .05 was selected as the level of significance. The results of Direct Instruction Model were consistently better than those of traditional instruction, both in terms of achievement and attitude. After an interval of six weeks, the students taught through DI also showed better retention, Rubina,.(2010).

The experimental group was taught by the direct method, while the control group was taught by the traditional method for a period of six weeks. At the end of the treatment, a post-test was administered and scores of pre-test and post-test were served as data for the study. Applying t-test and analysis of variance tested to know the significance of difference between the scores of groups at 0.05 levels. After analyzing the secured data it was concluded that the direct teaching method was more effective as a teaching-learning technique for English compared to the traditional teaching method. Students in the direct teaching method outscored the students working in the traditional learning situation. Low achievers in the direct teaching showed significant superiority over low achievers learning English by the traditional method. Thus, direct teaching was found to be a more effective method for quality teaching of English to the low achievers as compared to the traditional method of teaching. High achievers, whether they were taught English by the direct or traditional method, retained learned material at the same rate. Low achievers who were taught English by the direct method retained more material as compared to low achievers taught by traditional method of teaching (Ishtiaq & Muhammad2010),

Gender and Pupils Academic Performance in Numeracy

Gender differences in scholastic achievement test as a function of method of measurement were examined by comparing the performance of male and female history students in three senior high

schools in the Cape Coast Metropolis on essay and multiple-choice test items. The T-test for testing difference in means of two samples was used for the analysis. Female students performed significantly better than male students on essay test items. However, there was no statistical difference on multiple-choice items between females and males. It is clear that female students do not have any problem with examination forms; they perform better in all forms of examination, (Charles, 2015)

Cathy (2005) says that sex differences in socialization are associated with an economy that places a high premium on the superior strength and superior development of motor skills required strength, which characterize the male. Gender socialization does not stop at home, but continues in nursery elementary and later in high school and colleges.

The study adopted an embedded mixed methods research. Ex post facto Causal comparative research design was employed. The study focused on 18 public secondary schools, 18 Directors of Studies and 140 teachers within Marakwet East Sub County. The study used stratified and simple random sampling to select a sample of 72 secondary school teachers, 10 secondary schools, 10 directors of studies and 10 secondary school Principals. Data were collected through administering questionnaires to teachers, interviewing Principals and Directors of Studies, observation, and document analysis. Descriptive and inferential statistics were used to analyze data. Collected quantitative data was analyzed using ANOVA. Qualitative data were analyzed through thematic and in-depth descriptions of observed and recorded data. Frequency tables and graphs were used to present the data. This study found the need to implore education stakeholders to strive to embrace gender equity for enhanced academic achievements (Charles & Paul 2021)

Kiminyo, (2005) found out that girls tended to perform better that boys in the conversation of weight. He attributed the differences in performance of weight by boys and girls to environmental experiences. His explanation was that girls spent more time during their practical periods at school learning how to cook, which involved measuring difference amounts of ingredients for cooking while boys got involved in activities that do not enhanced acquisition of cognitive abilities of weight. In another study, done in Nairobi by Kiminyo (2008) about conversation of numbers and mass, he found that boys performed slightly better than girls, though the performance was not significant. The explanation given was that the activities and games that boys engage in influence their slightly better cognitive tasks performance, boys played with sticks, stones, and therefore were likely to develop these concepts earlier than girls.

School Types and Pupils' Academic Performance in Numeracy

Better comprehension of the effect of the school characteristics on learning is important because public policy can influence the characteristics of public schools, as well the cost of private schools through vouchers and scholarship. Ibia, (2015) Opined that in addition to educational materials supplied to schools, the setting based on school also influences teaching and learning of the pupils and hence the level of the pupils academic performance. Thus, the specific type of school dictates what is taught, how it is taught and what materials are available. Ibia, further maintained that where educative materials are deprived, pupils suffer from academic deterioration and mental imbalance. Also where the teacher relates positively with the pupils. The school becomes conducive and learners perform well in their academic endeavors.

Alimi, and Alabi (2012), examined the influence of school types and facilities on pupils' skills in Ondo state. It was designed to find out whether facilities and pupils' cognitive skills are related in

private and public primary schools respectively. Descriptive survey design was used. Proportionate random sampling technique was used to select 50 schools in Ondo state. Two sets of research instruments school facility descriptive and pupils cognitive skills questionnaire for headmasters; and school facility descriptive questionnaire for the teachers were used for the study. The study revealed a significant differences in facilities available in public and private schools in Ondo state. The study revealed also, there is no significant differences in pupils' cognitive skills of pupils' in the two types of schools.

Appraisal of the Literature Reviewed

The literature review started with a holistic look at various views and opinions on social constructivism theory of learning which serves as the theoretical review that guided this study. This was followed by a critical review of the conceptual studies such as concept and objectives of primary education, concept of Personalised, direct instruction and concept of academic performance. It was established that pupils developed and learned Numeracy better when they are furnished with experiences that allow them to dig into and manipulate materials to construct and learn numeracy ideas. As pupils learn through purposeful, critical thinking and meeting the demand of each pupil, they build critical basic skills for academic performance. The reviewed literature however did not establish how the variable of gender could influence pupils' performance. This apparent disregard what necessitated this study.

On the independent variable of Personalised and direct instructions, the literature search was able to situate the review according to authors' views on their conceptual meanings, procedures for implementation and possible drawback of the instruments. However, to give the review a broader focus, empirical studies were reviewed to show the degree which previous findings could be evaluated in relation to the problem of the study slated in Chapter One. Several empirical studies

were carried-out in foreign educational settings and in other subject areas, language, social science, science and mathematics, respectively. The researcher discovered that during extensive literature review in Personalised and direct instructions on the academic performance in Numeracy, most of the researchers found links between Personalised and direct instructions and Numeracy skills. The Personalised and direct instructions have been discovered to provide the opportunity for children to practice and develop critical and social skills including perspective talking, cooperation, peer interaction, turn-taking, resolving social conflicts, and understanding social rules.

Lastly, the moderating variable of pupils' gender and school-type considered in this research work were established to have an impact on pupils' academic performance in most of the school subjects and at the primary to tertiary school levels. At this point, the researcher's voice in this study is always informed by views, opinions and findings as mirrored in the literature reviewed.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter focuses on the research design, population, sample and sampling techniques, research instrument, validity, reliability, procedure for data collection and method of data analysis.

Research Design

This research work adopted the pre-test, post-test, control group quasi-experimental research design of 3X2X2. The design is suitable in establishing the possible cause and effect relationship. Moreover, Dinardo(2008) averred that quasi-experimental design is used to forecast the causal impact of an intervention on its target population without any random assignment. It is also the research design in which independent variables are manipulated, and the participants are between-subject because they were not randomly assigned to conditions or orders of conditions (Cook & Campbell, 1979).

3X2X2 factorial design represents three factorial levels. The first level connotes two experimental groups (Personalised and direct instructions) and one control group). The second factorial level is based on gender that is male (M) and female (F), while the third factorial level is the school type (public and private). This design allowed for the experimental groups to receive treatment (Personalised and direct instructions) while the control group did not receive any treatment, although the control group was taught the same topics as the experimental group using the conventional teaching method. However, both the experimental and control groups received the pre-test and the post-test before and after treatments, respectively.

Variables of the Study

Independent variables at 3 levels

i. Personalised Instruction

ii. Direct Instruction

iii. Conventional Method

Moderator Variables

i. Gender—Male and Female

ii. School type –Public and Private

Dependent Variable

i. Academic Performance in Numeracy

Table1: Factorial Matrix 3x2x2 for the Variables of the study

Treatment	Gender	School type	
Experimental Group 1	Male	Public	Private
	Female		
Experimental Group 2	Male	Public	Private
	Female		
Control Group	Male	Public	Private
	Female		

Table2: Factorial design on Personalised instruction and direct instruction with a control group

Variables	Gender		School-Type		Academic performance
	Male	Female	Public	Private	
	Pre-test		Treatment		Post-test
Experimental GP 1	01		X1		02
Experimental GP 2	01		X2		02
Control GP	01		-		02

The Research Design

01 x1 02--Experimental Group 1

01 x2 02--Experimental Group 2

01 - 02--Experimental Group 3

Where 01, 01, 01 are the pretest for the three groups

and 02, 02, 02 are the posttest for all the groups respectively

Population of the Study

The population of this study are primary three in all primary schools in Ilorin West Local Government Area of Kwara state while the target population of this study are all primary three pupils in both 61 public primary schools with a total of 6,696 and 266 private schools with total of 13,443 primary schools children in Ilorin West Local Government Area, Kwara state, (Kwara State School Census Report,2018-2019)

Sample and Sampling Techniques

Sample size for the study was 6 primary three pupils. The multistage sampling techniques was used. The purposive sampling technique was used to select 6 mixed primary schools (Boys and Girls schools) because of certain characteristics they possessed that relevant to the conduct of this

study. Schools are classified into two strata (public and private) from which six schools are randomly selected. Three private schools as well as three public schools were randomly selected as the experimental groups and control group. (One private and one public school as experimental group one) and (one private and one public school as experimental group two) and control group (one private and one public). Thereafter, primary three pupils of these schools were selected for the experimental groups as well as the control group.

Research Instruments

Instruments were used to elicit information and three treatment packages.

Instrument

i. Pupils' Numeracy Performance Test (PNPT)

Treatment Packages

i. Instructional Guide for Personalised Instruction (IGPI)
ii. Instructional Guide for Direct Instruction (IGDI)
iii. Instructional Guide for Conventional Method (IGCM)

Pupils' Numeracy Performance Test (PNPT)

Pupils' Numeracy Performance Test (PNPT) was constructed by the researcher based on aid of primary three curriculum. It consists of two sections A and B. Section A is on demographic data of the participants like school name, school type, gender, class and subject. Section B comprised 20 multiple choice items with four options (lettered A to D) based on the topic taught-division of number, square and square root, time measurement, and fraction of number. The instrument is constructed to measure participants' knowledge, understanding and application see the table

below. The instrument was validated by 4 selected numeracy teachers in primary schools, researcher's supervisor and four lecturers in the Department of Early Childhood and Primary Education, Kwara State University, Malete and the reliability coefficient of the instrument was established using Pearson's Product Moment Correlation (PPMC)

Table 3: Table of Specification

Topic	Knowledge	Understanding	Application	Total
Division of number	2	1	1	4
Square and square root	2	2	2	6
Time measurement	2	2	2	6
Fraction	2	1	1	4

Instructional Guide for Personalised Instruction (IGPI) To describe and refer to detail in appendix

The instrument guide is designed by the researcher to guide class teachers on Personalised instruction group. It consists of 6 stages-introduction, presentation, clarification, evaluation, summary and assignment. There are 4 lessons in all. The treatment package lasted for 7 weeks. First week for the training of research assistants, second week for the administration of pre-test and 3-6 weeks for actual treatment. At 7th week post-test was administered. The instrument was validated by 8 selected Numeracy teachers in primary schools, researcher's supervisor and four lecturers in the Department of Early Childhood and Primary Education, Kwara State University, Malete

Instructional Guide for Direct Instruction (IGDI) To describe and refer to detail in appendix

This is used to guide research assistants in the experimental group 2 .It consists of 6 stages as the direct instruction -introduction, presentation, clarification, evaluation, summary and assignment. There are also 4 lessons in all. The treatment package lasted for seven weeks. First week for the training of research assistants, second week for the administration of pre-test, 3-6 weeks for the main exercise. At the 7th week post-test would be administered. The instrument was validated by 8 selected Numeracy teachers in primary schools, researcher's supervisor and some lecturers in the Department of Early Childhood and Primary Education, Kwara State University, Malete.

Instructional Guide for Conventional Method (IGCM)

This was used to usher the class teachers who are research assistants in the control group. It consists of 6 stages- introduction, presentation, clarification, evaluation, summary and assignment. There are 4 lessons in all. The placebo package lasted for seven weeks. 1 week for the training of research assistants, second week for the administration of pre-test, 3-6 weeks for the main activities. At 7th week post-test was administered. The instrument was validated by 8 selected Numeracy teachers in primary schools, researcher's supervisor and some lecturers in the Department of Early Childhood and Primary Education Kwara State University, Malete.

Validity of the Instruments

The validity of the instrument is the extent to which the instrument measures what it is supposed to measure at a given period. Face and content validities were carried out by the researcher to validate the study instrument. Pupils Numeracy Performance Test (PNPT), was given face and content validity by 8 selected Numeracy teachers in primary schools, researcher's supervisor, co-supervisor and 4 lecturers in the department of Early Childhood and Primary Education, Kwara State University, Malete.

Reliability of the Instrument

To ascertain the reliability of the Pupils Numeracy Performance Test (PNPT), 25 copies of the test were administered 2 times on primary 3 pupils in another school outside the study sample. The final drafts were tested 2 times, giving two weeks interval. Thereafter, Pearson Product-Moment Correlation (PPMC) coefficient was used to determine the reliability index of (r=0.81) was obtained. 0.7 below was not reliable and 0.7 above was reliable.

Procedure for Data Collection

The researcher collected a letter of introduction from the Head of the Department of Early Childhood and Primary Education, Kwara State University, Malete. This enabled the researcher to seek permission from the school authority and the class teachers in the schools selected. Four research assistants were trained and involved for the treatment groups. The research assistants were the class teachers of the primary three pupils in the selected classes. They were trained in their schools by the researcher prior to the treatment period to acquaint them with the instructional guide. And they were evaluated to ensure proper delivery during treatment. The data collection lasted for seven weeks. The first week was used for the training of the research assistants. The second week was for administration of the pupil's Numeracy Performance Test (PNPT) as the pre-test for both the experimental and control groups. Treatment for all the groups lasted for third and sixth week while the pupil's Numeracy performance test (PNPT) administered as posttest to all the groups (both the experimental and control group) on seventh week. Control groups were taught by their class teachers the same topics as selected for the treatment groups, using the conventional methods.

Method of Data Analysis

The data were analyzed using both descriptive and inferential statistics. The demographic data of the participants were analyzed using frequency counts, mean and percentage, while the research hypotheses were tested, using analysis of covariance (ANCOVA) at 0.05 level of significance. For the test hypotheses, the null hypotheses will be retained when the observed probability value is greater than or equal to 0.05 level of significance, and where the observed probability value is less than 0.05 level of significance, the null hypotheses will be rejected.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

This chapter focuses on data analysis and the result of study. Demographic data of the participants were presented using frequency counts and percentages, while all the research hypotheses were

tested using the Analysis of Covariance (ANCOVA) with decision taken at 0.05 level of significance

Table 4: Demographic Information of the Groups

Groups	No of Participants	Gender	Frequency	Percentage (%)
Personalised Instruction	54	Male	20	14.38
		Female	34	24.46
Direct Instruction	28	Male	12	8.63
		Female	16	11.51
Control group	47	Male	20	14.38
		Female	27	19.41
Total	139		139	100.0

Table 4 shows the demographic data of the groups (Personalised Instruction, Direct Instruction group and control group). There were fifty-four participants in Personalised Instruction group in which 20 were males (14.38%) and 34 were females (24.46%). There were also 28 participants in Direct Instruction group in which 12 were males (8.63%) and 16 were females (11.51%) while the control group had 47 participants in which 20 were males (14.38%) and 27 were females (19.41%). There were 139 participants altogether.

Research Hypothesis One: There is no significant main effect of treatment on pupils' academic performance in Numeracy.

Table 5: Showing summary of Analysis of Co-variance (ANCOVA) on effect of treatment on pupils' academic performance in Numeracy

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	967.818[a]	12	80.652	6.877	.240
Intercept	5851.672	1	5851.672	498.955	.000
Pretest	542.453	1	542.453	46.253	.132
Treatment	60.607	2	30.303	2.584	**.020**
Gender	.194	1	.194	.017	.898
School type	29.258	1	29.258	2.495	.117
Treatment * Gender	2.630	2	1.315	.112	.894
Treatment * School type	3.252	2	1.626	.139	.871
Gender * School type	1.075	1	1.075	.092	.763
Treatment * Gender * School type	14.782	2	7.391	.630	.534
Error	1360.430	116	11.728		
Total	138552.000	129			
Corrected Total	2328.248	128			

Table 5 shows the effect of treatment on pupils' academic performance in numeracy. There was significant effect of treatment on pupils' academic performance in numeracy ($F_{(2; 116)} = 2.584$, $P < 0.05$). The hypothesis is therefore rejected in the light of the result since the significant value (.020) is less than 0.05. This implies that treatment had significant effect on pupils' academic performance in numeracy.

Table 6: Summary of Bonferroni's Post Hoc pairwise Comparison of the scores within the three Groups

Treatment	Mean Score	Experimental 1	Experimental 2	Control Group
Personalised Instruction	72.713	04.249	*	*
Direct-Instruction	68.464	*	12.752	*
Conventional Method	59.961	*	*	8.503

Table 6 reveals that the significant main effect exposed by table 5 is as a result of the significant difference among: Personalised Instruction, Direct-instruction and Conventional Method. Personalised Instruction refer to experimental group 1, Direct-Instruction refers to experimental group 2 and Conventional Method known as control group. This implies that those taught with Personalised Instruction performed better than those taught with Direct-Instruction and those taught with Direct-Instruction out-performed significantly than those taught with traditional method.

Research Hypothesis Two: There is no significant effect of gender on pupils' academic performance in Numeracy.

Table 5 also reveals the effect of gender on pupils' academic performance in Numeracy. There was no significant effect of gender on pupils' academic performance in Numeracy ($F_{(1; 116)} = .017$; $P > 0.05$). The hypothesis is therefore accepted in the light of the result since the significant value (.898) is greater than 0.05. This implies that gender had no significant effect on pupils' academic performance in Numeracy

Research Hypothesis Three: There is no significant effect of school type on academic performance in Numeracy.

There was no significant effect of school type on pupils' academic performance in Numeracy ($F_{(1; 116)} = 2.495$; $P > 0.05$). The hypothesis is therefore accepted in the light of the result since the significant value (.117) is greater than 0.05. This implies that school-type had no significant effect on pupils' academic performance in Numeracy

Research Hypothesis Four: There is no significant interaction effect of treatment and gender on pupils' academic performance in Numeracy. Table 4 also shows the interaction effect of treatment

and gender on pupils' academic performance in Numeracy. There was no significant interaction effect of treatment and gender on pupils' academic performance in Numeracy ($F_{(2; 116)} = .112$; $P > 0.05$). The hypothesis is therefore accepted in the light of the result since the significant value (.894) is greater than 0.05. This implies that treatment and gender had no significant effect on pupils' academic performance in Numeracy.

Research Hypothesis Five: There is no significant interaction effect of treatment and school-type on pupils' academic performance in Numeracy

Table 5 also shows the interaction effect of treatment and school-type on pupils' academic performance in Numeracy. There was no significant interaction effect of treatment and school-type on pupils' academic performance in Numeracy ($F_{(2; 116)} = .139$; $P > 0.05$). The hypothesis is therefore accepted in the light of the result since the significant value (.871) is greater than 0.05. This implies that treatment and school-type had no significant effect of treatment on pupils' academic performance in Numeracy.

Research Hypothesis Six: There is no significant interaction effect of gender and school-type on pupils' academic performance in Numeracy.

Table 5 also shows the interaction effect of gender and school-type on pupils' academic performance in Numeracy. There was no significant interaction effect of gender and school-type on pupils' academic performance in Numeracy ($F_{(1; 116)} = .092$; $P > 0.05$). The hypothesis is therefore accepted in the light of the result since the significant value (.763) is greater than 0.05. This implies that gender and school-type had no significant effect of gender and school-type on pupils' academic performance in Numeracy.

Research Hypothesis Seven: There is no significant interaction effect of treatment, gender and school-type on pupils' academic performance in Numeracy. Table 5 also shows the interaction

effect of treatment, gender and school-type on pupils' academic performance in Numeracy. There was no significant interaction effect of treatment, gender and school-type on pupils' academic performance in Numeracy ($F_{(2; 116)} = .630$; $P > 0.05$). The hypothesis is therefore accepted in the light of the result since the significant value (.534) is greater than 0.05. This implies that treatment, gender and school-type had no significant effect on pupils' academic performance in Numeracy.

Summary of Findings

1. There was significant effect of Personalised and direct instructions on pupils' s academic performance in Numeracy ($F_{(2; 116)} = 2.584$, $P < 0.05$)
2. There was no significant effect of gender on pupils' academic performance in Numeracy ($F_{(1; 116)} = .017$; $P > 0.05$)
3. There was no significant effect of school type on pupils' academic performance in Numeracy ($F_{(1; 116)} = 2.495$; $P > 0.05$)
4. There was no significant interaction effect of treatment and gender on pupils' academic performance in Numeracy ($F_{(2; 116)} = .112$; $P > 0.05$)
5. There was no significant interaction effect of treatment and school-type on pupils' academic performance in Numeracy ($F_{(2; 116)} = .139$; $P > 0.05$)
6. There was no significant interaction effect of gender and school-type on pupils' academic performance in Numeracy ($F_{(1; 116)} = .092$; $P > 0.05$)
7. There was no significant interaction effect of treatment, gender and school-type on pupils' academic performance in Numeracy ($F_{(2; 116)} = .630$; $P > 0.05$).

Discussion of Findings

Findings emanated from this study revealed that there was significant main effects of Personalised and direct instructions on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State. This signifies that the pupils taught using Personalised and direct instructions performed better than their counterparts taught with conventional method. In the sense that pupils' interest and active involvement promote their work. The two strategies gave room for active involvements and they were child-centered approaches unlike conventional method where teacher take control of the class during teaching and learning and pupils as tabularassa who have nothing to contribute. This finding supported the submissions of Romiro,(2021) who investigated the effects of Personalised instruction on the academic achievement of students in Physics. Personalization in instruction was introduced through a Personalised modular instruction (in terms of content and procedure) followed by exercises/drills. Students were engaged in active learning through direct instruction using the Mayer's model from the teacher, small group discussion, peer mentoring and follow-up session/s by the teacher. Analysis of transcripts was done to determine the extent of learning of the respondents and the remediation to be implemented. After the execution of the lessons for a semester, the students were given a post-test. It was found out that the students who were exposed to the constructive learning environment through Personalised instruction performed better in their academic achievement in Physics: a highly significant effect on the academic performance of the students and a moderately high impact model of variability (72.7 %) in their academic achievement.

The finding also concurred with Alabi (2020) examined the effect of personalised instruction on students' learning outcomes and attitude in mathematics education at senior secondary school, Lagos State, Nigeria. The finding revealed positive effect of Personalised instruction on students over non-Personalised students and male over female also when considering in terms of gender on

attitude. Another finding of this study was in tandem with the Awofala (2014) revealed that Personalised instruction students had higher levels of selfconfidence, liking, usefulness, and motivation but recorded low level of anxiety regarding mathematics word problems compared with the non-Personalised group students.

The finding of this study is also in support of Oladayo (2012) study on the effects of Direct and Indirect instructional strategies on Mathematics achievement among junior secondary school students. The population consisted of students in a Public Secondary School in Owerri, Imo State. A sample of 102 students from two (2) intact classes (A & B) was drawn using simple random sampling (Balloting) on class basis. Group A students were taught Mathematics using Direct Instructional strategy, while Group B students were taught using Indirect Instructional strategy. The treatment lasted for 10 weeks of 20 sessions. Three research questions and three null hypotheses guided the study. Mathematics Achievement Test (MAT) was administered on the subjects at the end of treatment. The MAT was validated and its reliability test produced co-efficient of 0.86. Data collected were analyzed with Mean (x), Standard Deviation (SD), t-test analysis. Results got after data analysis indicated that direct instructional strategy has a better effect on students achievement in Mathematics compared to indirect instructional strategy; significant difference existed between direct and indirect instruction on students achievement in Mathematics; and gender is a significant factor in determining the effect of direct and indirect instructional strategy on students‟‟ achievement in Mathematics, in favour of the males. Based on these results,

recommendations were made for the adoption of direct instructional strategy in teaching Mathematics in secondary schools,

The findings was in tandem with Rubina,(2010).The study investigated the effect of the direct instruction model on intermediate class achievement and attitudes toward English grammar. It was an experimental study and the purpose was to explore the relative effectiveness of instructional methodology (independent variable) on students' achievement and attitude (dependent variables). The main objectives of the study were: 1) to measure the achievement of the experimental and control groups after providing treatment of direct instruction to the experimental group, 2) to measure the attitude of the experimental and control groups after providing treatment of direct instruction to the experimental group, 3) to compare the achievement of the experimental group with the control group after experiment and to compare the high achievers and low achievers of the experimental and control group, 4) to compare the attitude of the experimental and control groups toward English grammar after providing treatment of direct instruction, and 5) to compare the effect of direct instruction on the retention of students in English grammar. To achieve the above-mentioned objectives, null hypotheses were formulated and tested. The experimental group was taught through direct instruction and the control group was taught, as usual, through the traditional approach for a period of three months. Chi-square and t-tests were applied to test the null hypotheses, and .05 was selected as the level of significance. The results of Direct Instruction Model were consistently better than those of traditional instruction, both in terms of achievement

and attitude. After an interval of six weeks, the students taught through DI also showed better retention.

Another finding from this study showed that, there was no significant effect of gender on pupils' academic performance in Numeracy. This implies that gender had no significant effect on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara. State. The findings from this study was supported by the findings of Ganiyu, (2019). who submitted that there was no significant difference between male and female cognitive ability. The findings also support the submission of Nanman and Oyinbe, (2016) which revealed that there was no significance difference based on gender

The submissions from Vernon (2002) was against the findings of this study which reported that, many comparisons show average scores of boys and girls to be the same on general intelligence test. He said that, girls do a little better on most verbal tests and on tests involving rote memory than boys. On tests of inductive reasoning and arithmetical ability, though with a great deal of overlapping, the average differences, he said, seldom exceeds about four points of intelligence quotient. He added that the most marked difference occurs on spatial and mechanical tests, and wonders if such ability might be attributed to the cultural influences on our civilization, which encourages boys to develop physical, constructional and mechanical interests. He concluded that, many surveys demonstrate that the range or spread of ability is slightly more restricted in girls.

The study also revealed the effect of school-type on pupils' academic performance in Numeracy in Ilorin East Local Government Area of Kwara State. There was no significant effect of school-type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State. This implies that school-type had no significant effect on pupils' academic performance in Numeracy. The findings collaborated the findings of Yusuf and Adigun (2010)

who examined the influence of school type, sex and location on students' academic performance in Ekiti State secondary schools. Based on their findings, it was also revealed that school type, had no significance effect on students' academic performance. Also, Alimi, Ehinola and Alabi (2012) who investigated the influence of school type and facilities on students' academic performance in Ondo State. They revealed a no significant difference in the academic performance of students in the two types of school.

Contrary to the findings of the study, Newhouse and Beegle (2005) evaluated the impact of school type on the academic achievement of junior secondary school students (grades 7-9) Using data from Indonesia. The primary data source for the study was the three full rounds of the Indonesia Family Life Survey (IFLSI, IFLS2, and IFLS3). The result revealed that students that attended public junior secondary schools, controlling for other characteristics, have higher test scores upon completion than those who attended private school. The findings negated the finding of Okon & Archibong (2015) who examined the difference in the academic achievement of students in both private and public secondary schools in Akwa Ibom State. The findings revealed that students in private secondary schools performed better than those in public schools.

The study also revealed the interaction effect of personalize and direct instructions and gender on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State. More so, There was no significant interaction effect of personalize and direct instructions and gender on pupils' academic performance in Numeracy. This implies that personalize and direct instructions and gender had no significant effect on pupils' academic performance in Numeracy in West Local Government Area of Kwara State.

The study divulge the interaction effect of gender and school-type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State. There was no

significant interaction effect of gender and school-type on pupils' academic performance in numeracy. This implies that gender and school-type had no significant effect on pupils' academic performance in Ilorin West Local Government Area of Kwara State. The study brings to light the interaction effect of personalize and direct instructions, gender and school-type on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State. There was no significant interaction effect of personalize and direct instructions, gender and school-type on pupils' academic performance in Numeracy. This implies that personalize and direct instructions, gender and school-type had no significant effect on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This chapter focuses on conclusion and recommendations of the study. In the discussion, findings were examined in connection with the findings from relevant previous studies especially those reviewed in chapter two of this study. Based on the discussion, conclusion was now drawn and recommendations made while suggestions for further studies are made based on the limitation of the study.

Conclusion

The study investigated the effects of Personalised and direct instructions on pupils' academic performance in Numeracy in Ilorin West Local Government Area of Kwara State. Based on the findings of the study, it can be explicitly stated that Personalised and direct instructions can enhance better performance in Numeracy than the traditional method of teaching and learning. But Personalised teaching method is more effective than direct instruction. Further, the result of this study, gender and school type had no significant effect on pupils 'academic performance in Numeracy in Ilorin West Local Government Area of Kwara State

Recommendations

In the light of the conclusion, the following recommendations are made:

1. Numeracy teachers should be enlightened and trained on the effectiveness of Personalised and direct instructions on pupils' academic performance in Numeracy.
2. Curriculum developer in Numeracy like, Federal and State Ministries of Education, school proprietors and Nigerian Educational Research and Development Council (NERDC) should incorporate Direct and Personalised instructions into the numeracy curriculum as one of the innovative strategies that would be used to teach Numeracy especially in primary schools.
3. It is also essential that Colleges of Education and University (Faculties of Education) should be sensitized on their responsibility to train pre-service teachers on the use of direct instructions in learning. Similarly, practicing teachers should be encouraged to learn the use of direct instructions through seminars and workshops.
4. Pupils' academic performance should not be determined by the teachers, head teachers and proprietors/proprietress based on their gender and school type because, the two factors have been discovered not to be strong factors that hinder pupil's academic performance. Instead,

equal treatment

Limitation of the study

The study was limited to primary three and basic such as: division of number, square and square root, measurement time and fraction also limited to primary schools and carried out in Ilorin West Local Government Area of Kwara State. If the investigation had a wide coverage such as all pupils in primary schools in both public and private schools in Kwara State, the findings would have had a more generalizable effect.

Suggestions for Further Studies

Further researchers could carry out the study to investigate the effects of direct and Personalised instructions in Numeracy contents. This can be stretched-out to other subject areas throughout the primary levels of education and making use of another statistical technique like t. test. This study can be replicated on different group of pupils, preferably from other locations throughout the nation to ascertain whether the findings generated from the study is valid and generalizable to a larger or different context.

REFERENCES

Alimi N. & Alabi, H. (2012). School types and Academic performance of students in senior Secondary Schools In ondo, Nigeria. *Journal of international Education studies,*

Akinsola, M. K. & Awofala, A. O. A. (2009). Effect of Personalization of Instruction on Students' Achievement and Self-efficacy in Mathematics Word Problems. *International Journal of Mathematical Education in Science and Technology, 40(3), 389-404.*

Alabi, I. A.(2020) .Effect of Personalised Instruction on Students' Learning Outcomes and Attitude in mathematics Education at Senior Secondary School, Lagos State, Nigeria, Department of Mathematics, Adeniran Ogunsanya College of Education (AOCOED), Oto/ Ijanikin, Lagos State, Nigeria

Alimi, O. S Ehinola, G. B and Alabi, F. O (2012) School Types, Facilities and Academic Performance of Students in Senior Secondary Schools in Ondo State, Nigeria. *International Education Studies:* 5(3); 44-48.

Akudo, O. K., Olaoye, A. A., Alabi, I. A. & Otun I. W. (2017) Tiered instruction and students achievements for mathematical growth and sustainable development ABACUS, *Journal of Mathematical Association of Nigeria (MAN)*
Vol. 42, No 2. Pp. 242.

Awofala, A. O. A. (2017) Effect of personalisation of instruction on students' anxiety in mathematical word problems in Nigeria. *Bulgarian Journal of Science and Education Policy (BJSEP), Volume 11, Number 1,*

Awofala, A. O.A. (2014). Examining personalisation of instruction, attitudes toward and achievement in mathematics word problems among Nigerian senior secondary school students. *International Journal of Education in Mathematics, Science and Technology, 2(4), 273-288.*

Awofala, A. O. A., Arigbabu, A. A. & Awofala, A. A. (2013). Effects of framing and team individualized instructional strategies on senior secondary school students' attitudes toward mathematics. Acta Didactica Naponcensia, 6(1), 1-22.

Adams, G.L., & Engelmann, S. (1996). Research on Direct Instruction: 25years beyond DISTAR. Seattle, WA: Educational Achievement Systems.

Bates, E. T., Wiest, L. R. (2004). Impact of personalization of mathematical word problems on student performance. The Mathematics Educator, 14(2), 17–26.

Becker, W., & Carnine, D.W. (1981). Direct instruction: A behaviour theory model for comprehensive educational intervention with the disadvantaged. In S.W. Bijou & R. Ruiz (Eds.), Behaviour modification: Contributions to education (145-210). Hillsdale, NJ: Lawrence Erlbaum Associates.

Bereiter, C., & Engelmann, S. (1966). Teaching disadvantaged children in the preschool. Engelwood Cliffs, NJ: Prentice-Hall.

Berk, L. E. (2004). *Development through the lifespan (4thed.)*. New York, Pearson, Allyn Bacon Publishers.

Bronfenbrenner, U. (1979) developmental ecology through space and time: A future perspectives

Bibby, J., & Peil, M. (2006). Secondary education in Ghana Private enterprise and social selection. London: Longman.

Bohner, G., & Wänke, M. (2002). Attitudes and attitude change. Psychology Press.
Cakir, O., Simsek, N. (2010), A comparative analysis of the effects of computer and paper-Based personalization on student achievement, Computers & Education 55. pp. 1524–1531

Cathy, K. H. (2005). Prevalence and factors related to social skills among secondary school students in Kota Tinggi District, Johor, Malaysia. *Tropical Biomedicine,* 23(1), 75-84.

Charles, A. O. (2015),Gender Differences in Students' Performance in History at Senior high Schools in Cape coast, department of arts & social sciences education university of cape coast, Ghana

Charles K. K. & Paul A. O. (2021),Effects of Gender on Students' Academic Achievement in Public Secondary Schools in Marakwet East Sub County, Kenya, *Department of Post of Graduate Studies at the Catholic University of Eastern Africa, International Journal of Humanities Social Sciences and Education (IJHSSE)*

Cooper, J. L. (2010). Getting started: Numeracy large classes. *New Directions for Teaching & Learning*, 54(81), 173-28.

Cole, M. & Cole. S. (2001). The Development of Children, 4th Ed. New York : Scientific American Books, distributed by W.N. Freedom and company

Darch, C., Gersten, R., & Taylor, R. (1987). Evaluation of Williamsburg County Direct Instruction program: Factors leading to success in rural elementary programs. Research in Rural Education, 4, 111-118.

Dhlamini, J., & Mogari, D. (2013). The effect of a group approach on the performance of high school mathematics learners. Pythagoras, 34(2), Art. #198, 9 pages. http://dx.doi. org/10.4102/pythagoras. v34i2.198.

Farrajallah, A. E. (2017) The Impact of Employing the (Think - Pair - Share) Strategy to Gain Some Number Sense Skills and Mathematical Communication Skills Among Fifth Grade Students.

Ganiyu, A. Y., (2019). Effects OF think-pair-share and problem solving strategies on academic performance of pupils' in numeracy in Ekiti Local Government of Kwara State. Pro-Quest Dissertation/Thesis, Kwara state university, Malete, Nigeria.

Gagnon, J. and Maccini, P. (2011). Direct Instruction in Middle School Mathematics for Students with Learning Disabilities. The Access Center Improving Outcomes for All Students K-8. Washington. U.S.A.

Ibia,(2015). School type and students Academic performance in Numeracy. Retrieved from

https://www.mcser.org> article

Ishtiaq, H. & Muhammad, Z(2010),Effect Of Direct Teaching Method On The Academic Achievement

Of High And Low Achievers In The Subject Of English At The Secondary Level. Journal of College Teaching and Learning. University of Science and Technology, Pakistan

Jenkins, O.John M and James W. Keefe (2010). Personalised Instruction: The Key to Student Acheivement. 2nd Edition. Rowman & Littlefield Education.

Jenkins, O. John M and James W. Keefe (2002). Two Schools: Two Approaches to Personalised Learning. Thomas Haney Secondary Centre.

Jenkins, John M and James W. Keefe (2005). Personalised Instruction. Phi Delta Kappa Educational Foundation

Jenkins, John M and James W. Keefe (2008). Personalised Instruction: The Key to Student Acheivement. 2nd Edition. Rowman & Littlefield Education.

Kail, D. R., &Cavanaugh, S. D. (2010). Parents and society Involvement : A Multiple Mediational Analysis. *Journal of Prevention & Intervention in the Community*, *38*(3), 183–197.

Kiminyo, (2008).*Parent and gender engagement and leadership.*Research Report No.134. Saskatoon, Canada: Dr. Stirling McDowell Foundation for Research into Teaching.

Kiminyo, M. D. (2005). *General psychology of education Nairobi.* Education Research and Publication Co.

Ku, H-Y. & Sullivan, H. J. (2002). Student Performance and Attitudes Using Personalised Mathematics Instruction. Educational Technology Research and Development, 50(1), 21-33.

Kozloff, M.A.; LaNunziata, L., Cowardin, J., and Bessellieu, F. B. (2000). Direct Instruction: Its Contributions to High School Achievement. U.S.A.

Kozloff, M.A., LaNunziata, L., Cowardin, J., & Bessellieu, F.B. (2001). Direct Instruction: Its contributions to high school achievement. High School Journal, 84 (2), 54-72.

Lioyd, P.C. (2006). Power and Independence: perception of inequality. London: Routledge and Kegan Paul.

Mohamed, L. & Waheed, H. (2011). Secondary Students' Attitude towards Mathematics in a xvi. Selected School of Maldives. *International Journal of Humanities and Social Science Vol. 1 No. 15, pp.277-281*

Mubeen S., Saheed S. & Arif, M. H. (2013) Attitude towards mathematics and academic achievement in mathematics among secondary level Boys and Girls. *IOSR Journal of Humanities and Social Science (JHSS), Volume 6, Issue 4, pp 38 - 41*

Newhouse, D. & Beegle, K (2005) The effect of school type on Academic Achievement: Evidence from Idonesia. Work Bank Policy Research working paper 3(6) 104.

Nnamani, S.C. & Oyibe, O.A. (2016). Gender and academic achievement of secondary school students in Social studies in Abakaliki urban of Ebonyi state. British *journal of education*, 4(8), 84-95.

Obaid, William Taodhars. (2004). Mathematics education for all children in the light of the requirements of the standards and the culture of thinking, Oman, Dar Al-Masira.

Okon, C., & Archibong, U. (2015). Teachers' attitudes to social studies and students' performance in junior secondary three certificate examination. *Asian Journal of Social Science and Humanities, 3* (3), 44 – 48.

Oladayo, O.T. (2012).. Effects of Direct and Indirect Instructional Strategies on Students‟ Achievement in Mathematics. An International Multidisciplinary Journal, Ethiopia Vol. 6 (4), Serial No. 27, October, 2012 ISSN 1994-9057 (Print) ISSN 2070--0083 (Online),Department of Educational Psychology, Guidance & Counseling, University of Port Harcourt, Rivers State

Olasehinde, K. J & Olatoye, R. A (2014). A Comparative Study of Public and Private Senior Secondary School Students' Science Achievement in Katsina State, Nigeria. *Journal of Educational and Social Research*, 2, 123-139

Olosunde, G.R. & Olaleye, O.O. (2010). Effect of concept mapping strategy on senior secondary school students' performance in mathematics. Journal of National Mathematical Sciences, 1 (1), 29-53.

Renninger, K. A., Ewen, L., & Lassher, A. K (2002). Individual interest as context in expository text and mathematical word problems. Learning and Instruction, 12, 467-491

Rubina, K.P. (2010)The Effect Of Direct Instruction Model On Intermediate Class Achievement And Attitudes Toward English Grammar. Journal of College Teaching & Learning – February 2010 Volume 7, Number 2 99, Ali Shah Arid Agriculture University, Pakistan

Rogoff, B. (2003). The culture nature of human development. Oxyford University Press.

Romiro, G. B.(2021),The Effects of Personalised Instruction on the Academic Achievement of Students in Physics .AMA International University – Bahrain, Kingdom of Bahrain

Rosenshine, B. (1996). Advance on research on instruction. Journal of Educational Research, 88(5), pp.262-268.

Rosenshine, B. and Steven (1983). Teaching functions in instructional programs. The Elementary School Journal, 83(4), pp.335-351

Santrock, J. W. (2007). *A topical approach to life-span development, third Ed.* New York: McGraw-Hill.

Slavin, R.E (1994). Cooperative learning: theory, research, and practice (2nd ed.)

Succeed, D. (2001). Direct Instruction: A Review of the Research. Thesis from the University of North Carolina at Wilmington, Watson School of Education. Retrieved November 25, 2003 from: http:// people.uncw.edu/kozloffm/shumanthesisdi.html.

Steiner, V. J., & Mahn, H. (1996). Sociocultural Approaches to Learning and Development: A Vygotsky Framework. *Educational Psychologist*, 191-206

Tudge, J., & Scrimsher, S. (2003). Lev Vygotsky on education: A cultural-historical, interpersonal, and individual approach to development. In B. Zimmerman & D. Schunk (Eds.), Educational psychology: A century of contributions (207-228). Mahwah, NJ: Lawrence Erlbaum Associates.

Turuk, M. C. (2008). The relevance and implications of Vygotsky's socio-cultural theory in the second Language classroom.*ARECLES,5*, 244-262.

Tahar, N. F., Ismail, Z., Zamani, N. D., & Adnan, N. (2010). Students‟ Attitude Toward Mathematics: The Use of Factor Analysis in Determining the Criteria. Procedia-Social and Behavioral Sciences, 8, 476–481.

Tezer, M. & Karasel, N. (2010). Attitudes of primary school 2nd and 3rd grade students towards mathematics course. Procedia Social and Behavioural Sciences, 2, 5808-5812

Turuk, M. C. (2008). The relevance and implications of Vygotsky's socio-cultural theory in the second Language classroom.*ARECLES,5*, 244-262.

WAEC, (2017). West African examinations council chief examiners' reports. Yaba: Lagos.

Turuk, M. (2008). The Relevance and Implications of Vygotsky's Socio cultural Theory in the Second Language Classroom. ARECLS, 5, 244-262.

Valiathan, P. (2009). Direct instruction model. Circuit, Retrieved octomber 1 2010.

Vernon, T. (2002). Teacher's comment and students' performance. *Journal of Educational Psychology 49 (44), 173-181*.

Verenikina, I. (2010). Vygotsky in Twenty-First-Century Research. Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications, 16-25

Vygosky, L. S. (1934). Thinking and speech. In R.N. Rieber& A.S Carton (Eds.). The collected works of L.S. Vygosky, 1: 39-92. New York: Plenum press.

Vygosky, L.S (1978). Mind in society: the development of higher psychological processes: Cambridge, MA: Harvard University press.

Yusuf, M.A & Adigun, J.T (2010). The influence of school sex, location and type on students' Academic performance. *International journal of education and science, 2(2) 81-85*

Appendix A

Pupils' Numeracy Performance Test (PNPT)

Dear pupils, this performance test is from M.Ed. student from the Kwara State University, Malete, working on the effects of Personalised and direct instructions on the academic performance of pupils in numeracy in Ilorin West Local Government Area, kwara state, Nigeria.

Kindly supply answers to the following questions as possible as you can. Any information given shall be treated confidentially.

SECTION A

Name of school _____

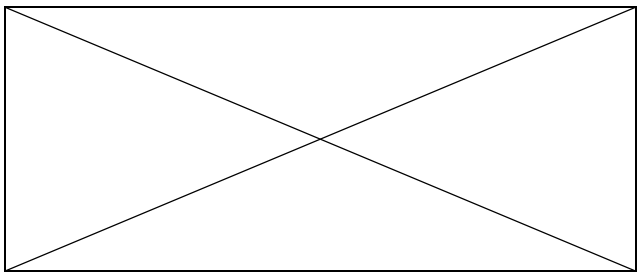
School type private ( ) public ( )

Gender male ( ) female ( )

SECTION B

INSTRUCTION: Attempt all the following questions with correct options from lettered A-D

1. Sade and the Mariam share 18 Apples equally. How many Apples will Mariam get? (a)10 (b)9 (c)9/9 (d)8
2. Square root of 64 is _____(a) 8/8(b) 9(c) 8(d) 10
3. How many hours make 3 days_____ (a) 120 hours(b) 100 hours(c) 76 hours(d) 72 hours
4. What is the fraction of the following shape?



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

5. Seven days make one week. How many days make one year? (a) 345 days (b) 356 days(c) 365 days (d) 355 days
6. Uncle bought 30 sweets and to be shared among three pupils. How many sweets will each of the pupils given? (a) 10(b) 30 (c) 11(d) 10/10

7. A loaf of bread was divided into six. If Kaseem takes two out of them. What is the fraction of he took? (a) 2/6(b) 1/6(c) 3/6 (d) 6/6
8. Change 120s to minutes (a)3min (b) 4min(c) 2min (d) 2 ½ min
9. Which of the following numbers are divisible by 2, 3, 4 and 6? (a) 22 (b) 23(c) 25 (d)24
10. Number that is arranged in same rows and columns is? (a)imperfect (b) consecutive square(c) perfect square (d) perfect consecutive square
11. The square of 3 is (a) (b) 9(c) 12(c) 4 (d) 12
12. Divide 48 by 2 (a) 24(b) 84(c) 12(d) 34
13. Change 11/6 to a mixed fraction (a) 2 1/6(b) 3 1/6(c) 1 5/6(d) 2 3/6
14. In 2/3, which number is numerator? (a) 2(b) 2/2(c) 2/3(d) 3
15. How many days make one week? (a) 7(b) 6(c) 5(d)8
16. What is $5^{2?}$ (a) 10(b) 15(c) 25(d) 26
17. Number that is not arranged in the same row and column is (a)abnormal square (b) prefect square(c) square root(d) consecutive perfect square
18. Clock move from_____ (a) left(b) right to left(c) left to right(d) right
19. 805 soldiers stood in 7 equal rows. How many soldiers are there in each? (a) 115(b) 7(c) 805(d) 10
20. Afternoon start from___ (a) 11pm(b)12 am(c) 2:00 pm(d) 12 pm

MARKING GUIDE

1.B	6.A	11.B	16.C
2.C	7.A	12.A	17.D
3.D	8.C	13.C	18.B

4.A	9.D	14.D	19.A
5.C	10.C	15.A	20.D

APPENDIX B

Instructional Guide for Personalised Instruction (IGPI)

Lesson 1

Subject: Numeracy

Date

Class: Primary Three

Topic: Division of numbers

Average age of the Pupils:-7 years

Duration: 40 minutes

Strategy: Think-pair-share

Behavioral Objective: by the end of the lesson pupils should be able to:

1) Define division of number correctly
2) Share oranges among themselves equally
3) Divide numbers given accurately

Instruction material: An Oranges and slides of Oranges, 20 sweets and a loaf of Bread

Reference Materials**:-**Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

STAGES	Teachers Activities	Pupils Activities	Duration	Remark
Introduction	Teacher introduces the lesson to the pupils by asking them to divide 20 sweets for 5 pupils in the class	Pupils were able to arrange it correctly	5 min.	Pupils were able to provide answers to the questions satisfactorily
Presentation-Step I	Teacher groups the pupils into 3 groups	pupils accept and tolerate themselves	3 min.	
Step II	Teacher presents his lesson to the pupils by writing it on the chalk-board as follows:20 divided by 5	Pupils watch and listen to their teacher	5 min.	
Step III	Teacher explains the examples on the chalk-board to the pupils with pertinent illustration for better understanding of the topic and asks them to write on their note-books	Pupils listen to their teacher's explanation and ask questions	3min.	

Step IV	Teacher asks the pupils to share 50 mangoes among 10 pupils	Pupils attempt the questions individually in the group	5min.	
Step V	Teacher asks the pupils to share their ideas and answers with other pupils in the group	Pupils explain their ideas on how they arrive at answer to one and other in the group.	3min.	
Step VI	Teacher asks the pupils to come out and explain to the whole class on how they arrive at answer.	Representative of each groups come out one after the other to explain their ideas, steps involved to arrive at the answer	3min.	
Clarification	Teacher clarifies the concept through supervision and guiding during when pupils are writing the examples into their note-books	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	3min.	
Evaluation	Teacher asks each groups to solve one problem each from the following: 1 Taye and Kehinde were given 32 Apples. How many Apples will Kehinde take? 2. Share 100 sweets among 5 pupils 3. If Moridhiyah, Kayode and Musa were given 180 naira only. What will be Kayode's share?	Pupils respond to the questions based on what they have learnt in the class in a group	5 min.	Pupils provide answer to the questions correctly
Summary	Teacher summaries the whole lesson by	Pupils write it into their exercise books	2min.	

	re-explaining the major parts of it and asks pupils who missed it to write the correction			
Assignment	Teacher asks the pupils: If Mr. Musa bought toy cars for his children. He paid 200 for 8 toy cars. How many did each toy car cost?	Pupils also write the questions into their note-books	3min.	

Instructional Guide for Personalised Instruction (IGPI)

Lesson 2

Subject: Numeracy

Date

Class: Primary Three

Topics: Square and square root

Average age of the pupils: 7 years

Duration: 40 minutes

Strategy: Think-pair-share

Behavioral Objective: by the end of the lesson pupils should be able to:

1) Define square root correctly
2) Difference between perfect squares and consecutive perfect squares
3) Solve some problems on squares root accurately

Instruction materials: Counters and chart showing multiplication table

Reference Materials**:-**Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

STAGES	Teachers Activities	Pupils Activities	Duration	Remark
Introduction	Teacher introduce the lesson to the pupils by asking them to arrange 4 and 9 counters in equal numbers of rows and columns	Pupils were able to arrange it correctly	5 min.	Pupils were able to provide answers to the questions satisfactorily
Presentation-Step I	Teacher groups the pupils into 3 groups	pupils accept and tolerate themselves	3 min.	
Step II	Teacher presents his lesson to the pupils by writing the following on the chalk-board: Arrange 9, 16 and 12 in the same rows and columns	Pupils watch and listen to their teacher	5 min.	
Step III	Teacher explains the examples on the chalk-board to the pupils with pertinent illustration for better understanding of the topic and asks them to write on their note-books	Pupils listen to their teacher's explanation and ask questions	3min.	
Step IV	Teacher asks the pupils to arrange the following numbers in rows and columns: 20, 49 and 100	Pupils attempt the questions individually in the group	5min.	
Step V	Teacher asks the pupils to share their ideas and answers with other pupils in the group	Pupils explain their ideas on how they arrive at answer to one and other in the group.	3min.	

Step VI	Teacher asks the pupils to come out and explain to the whole class on how they arrive at answer.	Representative of each groups come out one after the other to explain their ideas, steps involved to arrive at the answer	3min.	
Clarification	Teacher clarifies the concept through supervision and guiding during when pupils are writing the examples into their note-books	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	3min.	
Evaluation	Teacher asks each groups to solve one problem each from the following: 1. Fine the square of 4 and 5 2. what is the square of 9 3. What is the square root of 169?	Pupils respond to the questions based on what they have learnt in the class in a group	5 min.	Pupils provide answer to the questions correctly
Summary	Teacher summaries the whole lesson by re-explaining the major parts of it and asks pupils who missed it to write the correction	Pupils write it into their exercise books	2min.	
Assignment	Teacher asks the pupils: What is the square root of 144?	Pupils also write the questions into their note-books	3min.	

Instructional Guide for Personalised Instruction (IGPI)

Lesson 3

Subject: Numeracy

Date

Class: Primary Three

Topics: Measurement-Time

Average age of the pupils: 7 years

Duration: 40 minutes

Strategy: Think-pair-share

Behavioral Objective: by the end of the lesson pupils should be able to:

1) Differentiate between hours and seconds
2) Look at the clock and tell time correctly

Instruction materials: Wall clock and wrist watch

Reference Materials**:-**Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

STAGES	Teachers Activities	Pupils Activities	Duration	Remark
Introduction	Teacher introduces the lesson to the pupils by reading time measure as follows: 60 seconds make 1minute 60 minutes make 1 hour…	Pupils read it along with their teacher.	5 min.	Pupils were able to provide answers to the questions satisfactorily

Presentation-Step I	Teacher groups the pupils into 3 groups	pupils accept and tolerate themselves	3 min.	
Step II	Teacher draws clock on the chalk-board and explains the differences between hour and seconds with the aid of real clock	Pupils watch and listen to their teacher	5 min.	
Step III	Teacher explains the examples on the chalk-board to the pupils with pertinent illustration for better understanding of the topic and asks them to write on their note-books	Pupils listen to their teacher's explanation and ask questions	3min.	
Step IV	Teacher asks the pupils to draw the hour, minutes and seconds-hand on the clock-face the time given below: (a) 9:45 and 28s (b) 6:36 and 50s	Pupils attempt the questions individually in the group	5min.	
Step V	Teacher asks the pupils to share their ideas and answers with other pupils in the group	Pupils explain their ideas on how they arrive at answer to one and other in the group.	3min.	
Step VI	Teacher asks the pupils to come out and explain to the whole class on how they arrive at answer.	Representative of each groups come out one after the other to explain their ideas, steps involved to arrive at the answer	3min.	
Clarification	Teacher clarifies the concept through supervision and guiding during when pupils are writing the	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	3min.	

	examples into their note-books			
Evaluation	Teacher asks each groups to solve one problem each from the following: 1. Change 38 minutes to seconds 2. How many minutes are there in 120s? 3. Draw the hour, minutes and seconds-hand on the clock-face to tell the time given below: 10:30 and 50s	Pupils respond to the questions based on what they have learnt in the class in a group	5 min.	Pupils provide answer to the questions correctly
Summary	Teacher summaries the whole lesson by re-explaining the major parts of it and asks pupils who missed it to write the correction	Pupils write it into their exercise books	2min.	
Assignment	Teacher asks the pupils: How many hours make one day?	Pupils also write the questions into their note-books	3min.	

Instructional Guide for Personalised Instruction (IGPI)

Lesson 4

Subject: Numeracy

Date

Class: Primary Three

Topics: Fraction

Average age of the Pupils:-7 years

Duration: 40 minutes

Strategy: Think-pair-share

Behavioral Objective: Behavioral Objective: at the end of the lesson, pupils should be able to

1) Define fraction correctly
2) Differentiate between numerator and denominator
3) Look at shaded part of pictures and write out the fraction

Instructional materials: Oranges and Chart showing different shapes

Reference Materials**:** Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

STAGES	Teachers Activities	Pupils Activities	Duration	Remark
Introduction	Teacher introduces the lesson to the pupils by asking them: How many Oranges are there on the table? How many slides of oranges can you see on the table?	Pupils respond to their teacher's questions positively based on their experience	5 min.	Pupils were able to provide answers to the questions satisfactorily
Presentation-Step I	Teacher groups the pupils into 3 groups	pupils accept and tolerate themselves	3 min.	
Step II	Teacher presents his lesson to the Pupils by writing it on the chalk-board as follows: Examples	Pupils watch and listen to their teacher	5 min.	
Step III	Teacher explains the examples on the chalk-board to the pupils with pertinent illustration for better understanding of the topic and asks them	Pupils listen to their teacher's explanation and ask questions	3min.	

	to write on their note-books			
Step IV	Teacher asks the pupils to look at the shaded part of the shapes on the chart and write-out their fraction	Pupils attempt the questions individually in the group	5min.	
Step V	Teacher asks the pupils to share their ideas and answers with other pupils in the group	Pupils explain their ideas on how they arrive at answer to one and other in the group.	3min.	
Step VI	Teacher asks the pupils to come out and explain to the whole class on how they arrive at answer.	Representative of each groups come out one after the other to explain their ideas, steps involved to arrive at the answer	3min.	
Clarification	Teacher clarifies the concept through supervision and guiding during when pupils are writing the examples into their note-books	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	3min.	
Evaluation	Teacher evaluates his lesson by asking the pupils to solve the following question: Draw shapes to illustrate the following fractions: (i)4/6 (ii)3/4 (iii) 5/10	Pupils respond to the questions based on what they have learnt in the class in a group	5 min.	Pupils provide answer to the questions correctly
Summary	Teacher summaries the whole lesson by re-explaining the major parts of it and asks pupils who	Pupils write it into their exercise books	2min.	

	missed it to write the correction			

APPENDIX C

Instructional Guide for Direct Instruction (IGDI)

Lesson 1

Subject: Numeracy

Date

Class: Primary Three

Topics: Division of numbers

Average age of the pupils: 7 years

Duration: 40 minutes

Strategy: Problem-solving strategy

Behavioral Objective: by the end of the lesson pupils should be able to:

1) Define division of number correctly
2) Share sweets among themselves equally
3) Divide numbers given accurately

Instruction material: An Oranges and slides of Oranges, 20 sweets and a loaf of Bread

Reference Materials**:-**Understanding Mathematics Book 3

Introduction:

Teacher's activity: Teacher introduces the lesson to the pupils by asking them to divide 20 sweets for 5 pupils in the class

Pupil's activity: Pupils are able to divide it among themselves.

Presentation:

Teacher's activity step 1: teacher writes the following on the chalk-board: Share 100 sweets among 5 pupils

Pupils' activity step 1: pupils copy it into their notebooks

Teacher's activity step 2: teacher explains what he wrote on the chalk-board to the pupils with examples

Pupils' activity step 2: pupils listening to their teacher explanation and ask questions

Evaluation:

Teacher's activity step 3: teacher asks Pupils to solve the following problems:

1. Taye and Kehinde were given 32 Apples. How many Apples will Kehinde take?

2. Share 100 sweets among 5 pupils

3. If Moridhiyah, Kayode and Musa were given 180 naira only. What will be Kayode's share?

Pupils' activity step 3: pupils copy and solve them into their notebooks

Teacher's activity step 4: teacher marks the exercise done by the pupils and do the correction

Pupils' activity step 4: Pupils write the corrections into their notebooks

Conclusion: teacher concludes the lesson by re-explaining the major part of the lesson with pertinent examples.

Assignment: Mr. Musa bought toy cars for his children. He paid 200 for 8 toy cars. How many did each toy car cost?

Instructional Guide for Direct Instruction (IGDI)

Lesson 2

Subject: Numeracy

Date

Class: Primary Three

Topics: Square and square root

Average age of the pupils: 7 years

Duration: 40 minutes

Strategy: Problem-solving strategy

Behavioral Objective: by the end of the lesson pupils should be able to:

1) Define square root correctly
2) Difference between perfect squares and consecutive perfect squares
3) Solve some problems on squares root accurately

Instruction materials: Counters and chart showing multiplication table

Reference Materials**:-**Understanding Mathematics Book 3

Introduction:

Teacher's activity: Teacher introduces the lesson to the pupils by asking them to arrange 4 and 9 counters in equal numbers of rows and columns

Pupils' activity: Pupils are able to arrange it correctly.

Presentation:

Teachers' activity step 1: teacher writes 9, 16 and 12 on the chalkboard and asks the pupils to arrange them in rows and columns

Pupils' activity step 1: pupils copy it into their notebooks.

Teacher's activity step 2: Teacher explains what he wrote on the chalk-board to the pupils with examples

Pupils' activity step 2: pupils listening to their teacher explanation and ask questions

Teacher's activity step 3: teacher also explains the difference between the perfect square and consecutive perfect square to pupils and asks them to copy it into their notebooks

Pupil's activity step 3: Pupils write it into their various notebooks

Evaluation:

Teacher's activity step 4: Teacher asks the pupils to solve the following:

1. Fine the square of 4 and 5

2. Fine the square of 9 and

3. What is the square root of 169?

Pupils' activity step 4: Pupils solve the questions into their notebooks

Teacher activity step 5: teacher marks the exercise done by the pupils and do the correction

Pupils' activity step 5: Pupils write the corrections into their notebooks

Conclusion: teacher concludes the lesson by re-explaining the major part of the lesson with pertinent examples.

Assignment: What is the square root of 144?

Instructional Guide for Direct Instruction (IGDI)

Lesson 3

Subject: Numeracy

Date

Class: Primary Three

Topics: Measurement-Time

Average age of the pupils: 7 years

Duration: 40 minutes

Strategy: Problem-solving strategy

Behavioral Objective: by the end of the lesson pupils should be able to:

1) Differentiate between hours and seconds
2) Look at the clock and tell time correctly

Instruction materials: Wall clock and wrist watch

Reference Materials**:-**Understanding Mathematics Book 3

Introduction:

Teacher's activity: Teacher introduces the lesson to the pupils by reading time measure as follows:

60 seconds make 1minute

60 minutes make 1 hour…

Pupil's activity: Pupils read it along with their teacher.

Presentation:

Teacher's activity step 1: Teacher displays and also draws clock on the chalk-board

Pupils' activity step 1: Pupils watch their teacher

Teacher's activity step 2: Teacher explains the differences between hour and seconds with the aid of real clock and the one drew on the chalk-board

Pupils' activity step 2: Pupils watch and listen to their teacher and ask questions

Teacher's activity step 3: Teacher further his explanation on how to locate hour and second-hand on clock-face for better understanding and asks pupils to draw it into their notebooks

Pupils' activity step 3: Pupils copy and draw it into their notebooks

Evaluation:

Teacher's activity 4: Teacher asks pupils to solve the following problems:

1. Change 38 minutes to seconds

2. How many minutes are there in 120s?

3. Draw the hour, minutes and seconds-hand on the clock-face to tell the time given below: 10:30 and 50s

Pupils' activity 4: Pupils copy and solve the problems into their notebooks

Teacher's activity 5: Teacher do the corrections with brief explanation on the topic for better understanding of the pupils

Pupils' activity 5: Pupils copy the correction into their notebooks

Conclusion: Teacher concludes the lesson by emphasizing necessary points with more examples.

Assignment: How many hours make one day

Instructional Guide for Direct Instruction (IGDI)

Lesson 4

Subject: Numeracy

Date

Class: Primary Three

Topics: Fraction

Average age of the Pupils:-7 years

Duration: 40 minutes

Strategy: Problem-solving

Behavioral Objective: Behavioral Objective: at the end of the lesson, pupils should be able to

1) Define fraction correctly
2) Differentiate between numerator and denominator
3) Look at shaded part of pictures and write out the fraction

Instructional materials: Oranges and Chart showing different shapes

Reference Materials**: -** Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

STAGES	Teachers Activities	Pupils Activities	Duration	Remark
Introduction	Teacher introduces the lesson to the pupils by asking them: How many Oranges are there on the table? How many slides of oranges can you see on the table?	Pupils respond to their teacher's questions positively based on their experience	5 min	Pupils were able to provide answers to the questions satisfactorily
Presentation 1	Teacher presents his lesson to the Pupils by writing it on the chalk-board as follows: Examples	Pupils watch and listen to their teacher	5 min	
Step 2	Teacher explains the examples on the chalk-board to the pupils	Pupils listen to their teacher's explanation and ask questions	5 min	

	with pertinent illustration for better understanding of the topic and asks them to write on their note-books			
Clarification	Teacher clarifies the concept through supervision and guiding during when pupils are writing the examples into their note-books	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	5 min	
Evaluation	Teacher evaluates his lesson by asking the pupils to solve the following question: Draw shapes to illustrate the following fractions: (i)4/6 (ii)3/4 (iii) 5/10	Pupils respond to the questions based on what they have learnt in the class in a group	5 min	Pupils provide answer to the questions correctly
Summary	Teacher summaries the whole lesson by re-explaining the major parts of it and asks pupils who missed it to write the correction	Pupils write it into their exercise books	5 min	
Assignment	Teacher asks the pupils to solve these: write the fraction of the following shapes	Pupils also write the questions into their note-books	5 min	

Appendix D

Instructional Guide for Conventional Method (IGCM)

Lesson 1

Subject: Numeracy

Date

Class: Primary Three

Topic:- Division of Numbers

Average age of the Pupils:- 7 years

Duration:- 40 minutes

Strategy: Conventional method

Behavioural Objectives:-By the end of the lesson pupils should be able to:

1) Define division of number correctly
2) Share oranges among themselves equally
3) Divide numbers given accurately

Instruction material: An Oranges and slides of Oranges, 20 sweets and a loaf of Bread

Reference Materials:- Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

Stages	Teacher's activities	Pupil's activities	Duration	Remarks
Introduction	Teacher introduces the lesson to the pupils by asking them to divide 20 sweets for 5 pupils in the class	Pupils respond to their teacher's questions positively based on their experience	5minutes	Pupils were able to provide answers to the questions satisfactorily
Presentation	He presents his lesson to the Pupils by writing it on the chalk-board as follows: Examples 20 divided by 5=4	Pupils watch and listen to their teacher	5minutes	
Step II	He explains the examples on the white-board to the pupils with pertinent illustration for better understanding of the topic and asks them to write on their note-books	Pupils listen to their teacher's explanation and ask questions	10minutes	

Clarification	He clarifies the concept through supervision and guiding during when pupils are writing the examples into their note-books	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	5minutes	
Evaluation	He evaluates his lesson by asking the pupils to solve the following questions: 1) Taye and Kehinde were given 32 Apples. How many Apples will Kehinde take? 2) Share 100 sweets among 5 pupils 3)IfMoridhiyah, Kayode and Musa were given 180 naira only. What will be Kayode's share?	Pupils respond to the questions based on what they have learnt in the class	3minutes	Pupils provide answer to the questions correctly
Summary	He summaries the whole lesson by re-explaining the major parts of it and asks pupils who missed it to write the correction	Pupils write it into their exercise books	2minutes	
Assignment	He asks the pupils to solve these: Mr. Musa bought toy cars for his children. He paid 200 for 8 toy cars. How many did each toy car cost?	Pupils also write the questions into their note-books	3minutes	

Instructional Guide for Conventional Method (IGCM)

Lesson 2

Subject: Numeracy

Date

Class: Primary Three

Topic:- Square and square root

Average age of the Pupils:- 7 years

Duration:- 40 minutes

Strategy: Conventional method

Behavioural Objectives:-By the end of the lesson pupils should be able to:

4) Define square root correctly

5) Difference between perfect squares and consecutive perfect squares

1) Solve some problems on squares root accurately

Instruction material: Counters and chart showing multiplication table

Reference Materials:- Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

Stages	Teacher's activities	Pupil's activities	Duration	Remarks
Introduction	Teacher introduce the lesson to the pupils by asking them to arrange 4 and 9 counters in equal numbers of rows and columns	Pupils respond to their teacher's questions positively based on their experience	5minutes	Pupils were able to provide answers to the questions satisfactorily
Presentation	He presents his lesson to the Pupils by writing it on the chalk-board as follows: Arrange 9, 16 and 12 on the chalkboard and asks the pupils to arrange them in rows and columns.	Pupils watch and listen to their teacher	5minutes	
Step II	He explains the examples on the white-board to the pupils	Pupils listen to their teacher's	10minutes	

	with pertinent illustration for better understanding of the topic and asks them to write on their note-books	explanation and ask questions		
Clarification	He clarifies the concept through supervision and guiding during when pupils are writing the examples into their note-books	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	5minutes	
Evaluation	He evaluates his lesson by asking the pupils to solve the following questions: 1) Fine the square of 4 and 5 2. Fine the square of 9 and 3. What is the square root of 169?	Pupils respond to the questions based on what they have learnt in the class	3minutes	Pupils provide answer to the questions correctly
Summary	He summaries the whole lesson by re-explaining the major parts of it and asks pupils who missed it to write the correction	Pupils write it into their exercise books	2minutes	
Assignment	He asks the pupils to solve these: What is the square root of 144?	Pupils also write the questions into their note-books	3minutes	

Instructional Guide for Conventional Method (IGCM)

Lesson 3

Subject: Numeracy

Date

Class: Primary Three

Topic:-Measurement-Time

Average age of the Pupils:-7 years

Duration: 40 minutes

Strategy: Conventional method

Behavioural Objectives: By the end of the lesson pupils should be able to:

1) Differentiate between hours and seconds
2) Look at the clock and tell time correctly

Instruction material: Wall clock and wrist watch

Reference Materials:- Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

Stages	Teacher's activities	Pupil's activities	Duration	Remarks
Introduction	Teacher introduces the lesson to the pupils by reading time measure as follows: 60 seconds make 1minute 60 minutes make 1 hour…	Pupils respond to their teacher's questions positively based on their experience	5minutes	Pupils were able to provide answers to the questions satisfactorily
Presentation	He presents his lesson to the Pupils by writing it on the chalk-board as follows: Teacher draws clock on the chalk-board and explains the differences between	Pupils watch and listen to their teacher	5minutes	

	hour and seconds with the aid of real clock			
Step II	He explains the examples on the white-board to the pupils with pertinent illustration for better understanding of the topic and asks them to write on their note-books	Pupils listen to their teacher's explanation and ask questions	10minutes	
Clarification	He clarifies the concept through supervision and guiding during when pupils are writing the examples into their note-books	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	5minutes	
Evaluation	He evaluates his lesson by asking the pupils to solve the following questions: 1. Change 38 minutes to seconds 2. How many minutes are there in 120s? 3. Draw the hour, minutes and seconds-hand on the clock-face to tell the time given below: 10:30 and 50s	Pupils respond to the questions based on what they have learnt in the class	3minutes	Pupils provide answer to the questions correctly
Summary	He summaries the whole lesson by re-explaining the major parts of it and asks pupils who missed it to write the correction	Pupils write it into their exercise books	2minutes	
Assignment	He asks the pupils to solve these: How many hours make one day	Pupils also write the questions into their note-books	3minutes	

Instructional Guide for Conventional Method (IGCM)

Lesson 4

Subject: Numeracy

Date

Class: Primary Three

Topics: Fraction

Average age of the Pupils:-7 years

Duration: 40 minutes

Strategy: Conventional method

Behavioral Objective: Behavioral Objective: at the end of the lesson, pupils should be able to

1) Define fraction correctly
2) Differentiate between numerator and denominator
3) Look at shaded part of pictures and write out the fraction

Instructional materials: Oranges and Chart showing different shapes

Reference Materials**:-**Understanding Mathematics Book 3

INSTRUCTIONAL STRATEGY

Stages	Teacher's activities	Pupil's activities	Duration	Remarks
Introduction	Teacher introduces the lesson to the pupils by asking them: How many Oranges are there on the table? How many slides of oranges can you see on the table?	Pupils respond to their teacher's questions positively based on their experience	5minutes	Pupils were able to provide answers to the questions satisfactorily
Presentation	He presents his lesson to the Pupils by writing it on the chalk-board as follows: Examples	Pupils watch and listen to their teacher	5minutes	

Step II	He explains the examples on the white-board to the pupils with pertinent illustration for better understanding of the topic and asks them to write on their note-books	Pupils listen to their teacher's explanation and ask questions	10minutes	
Clarification	He clarifies the concept through supervision and guiding during when pupils are writing the examples into their note-books	Pupils also listen to their teacher and ask questions for more clarification and understanding of what they are writing	5minutes	
Evaluation	He evaluates his lesson by asking the pupils to solve the following question: Draw shapes to illustrate the following fractions: (i)4/6 (ii)3/4 (iii) 5/10	Pupils respond to the questions based on what they have learnt in the class	3minutes	Pupils provide answer to the questions correctly
Summary	He summaries the whole lesson by re-explaining the major parts of it and asks pupils who missed it to write the correction	Pupils write it into their exercise books	2minutes	
Assignment	He asks the pupils to solve these: write the fraction of the following shapes	Pupils also write the questions into their note-books	3minutes	

Appendix E

CONSENT FORM

AUTHORIZATION FOR MY CHILD/WARD TO SERVE AS A PARTICIPANT IN RESEARCH

I authorize the service of my child/ward named…… as a participant in the research investigation titled: **EFFECTS OF PERSONALISED AND DIRECT-INSTRUCTION ON PUPILS' ACADEMIC PERFORMANCE IN NUMERACY IN ILORIN WEST LOCAL GOVERNMENT AREA, KWARA STATE**

The nature and general purpose of the research procedure have been explained to me I understand that…… (Child name) will be given pre-service explanation of the research and that he/she may decline to serve. Further, I understand that he/she may terminate his/her service in this research at any time he/she desires.

Signed ……

Date ……..

(parent/guardian)