# IMPACTS OF DIGITAL STORYTELLING STRATEGIES ON INTEREST, READING FLUENCY AND COMPREHENSION OF PUPILS WITH READING DIFFICULTIES IN SOKOTO STATE, NIGERIA

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## DECLARATION

I declare that, the work in this thesis titled *IMPACTS* OF *DIGITAL STORYTELLING STRATEGIES ON INTEREST, READING FLUENCY AND COMPREHENSION OF PUPILS WITH READING DIFFICULTIES IN SOKOTO STATE, NIGERIA* has been carried out by me in the Department of Arts and Social Science Education. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this thesis was previously presented for another degree at this or any other Institution.

**Umaru GARBA** **……..** **……..**
**Signature** **Date**

## CERTIFICATION

This thesis titled IMPACTS OF DIGITAL STORYTELLING STRATEGIES ON INTEREST, READING FLUENCY AND COMPREHENSION OF PUPILS WITH READING DIFFICULTIES IN SOKOTO STATE, NIGERIA by Umaru GARBA, meets the regulations governing the award of Doctor of Philosophy in Teaching English as a Second language (PhD. TESL) of the Department of Arts and Social Science Education, Ahmadu Bello University, Zaria, and is approved for its contributions to knowledge and literary presentation.

| | | |
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## ABSTRACT

This study explores the Impacts of Digital Storytelling Strategies on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties (PURED) in Sokoto State, Nigeria. The major problem of the study was the predominant use of conventional instructional method in teaching reading skills to primary school pupils in the study area irrespective of their learning condition. The study has a sample size of 94 pupils drawn from two primary schools. Static Group Pre-test and Post-test research design was employed for the study. Five research questions were asked, and five null-hypotheses were formulated and statistically tested at $\alpha$=0.05 level of significance. t-test related, and independent samples were employed to test the null-hypotheses. Ten reading passages were selected and then converted into multi-modal forms of Digital Storytelling in form of Mp3 audio, Mp4 video and subtitles. U.G. Third Person Approach for Teacher-Generated (Content-Based) Digital Storytelling was used for the text conversion using ***Pinnacle Studio 19***. The study finds that, significant difference was found in the level of reading interest between pre-and-post-tests of pupils with reading difficulties exposed to DSTS. Significant difference was also noted in the level of reading comprehension of PURED between urban and rural schools. However, the study finds that no significant difference exists in the levels of reading fluency between gender and school locations of the pupils exposed to digital storytelling strategy. No significant difference was also noted in the level of reading comprehension between boys and girls exposed to digital storytelling in the study area. Consequently, the study concludes that, Digital Storytelling strategy has the potential to influence the interest of PURED to actively participate in their reading activities. The strategy also enhanced the reading fluency and comprehension of the participants across gender and school location. This has broken a new ground that the strategy is amiable to both gender and location of pupils with reading difficulties in the study area. Similarly, the screening batteries of the study has proven capable for screening pupils with reading difficulties for any possible intervention. Finally, the strategy has proven to be an inclusive learning strategy that could be deployed to provide equal access to teaching and learning in an inclusive classroom setting. In this view, DSTS is recommended to stakeholders in early grade reading programme intervention in the public primary schools, to cater for pupils with reading difficulties. The study also recommends that; primary school administrators should encourage their teachers to pursue additional Multimedia literacy skills through in-house staff training. Equally, the study recommends the Curriculum developed by this study to National Educational and Research Development Council (NERDC) for possible adaptation. It is also recommended that Nigerian teacher training institutions should establish Digital Multimedia Laboratory as a human development centre to prepare teachers for the use of emerging digital media as instructional tools to carter for PURED. Lastly, Publishers of primary schools English reading materials should think of converting their books into multimedia formats for the benefits of teaming populations of pupils with reading difficulties in Nigeria.

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## LIST OF ABBREVIATIONS

**ABE** Adult Basic Education

**AFT** American Federation of Teachers

**ANOVA** Analysis of Variance

**CASAS** Comprehensive Adult Student Assessment System

**CDE** California Department of Education

**CDS** Centre for Digital Story

**C-ET** Comprehension Encoding Theory

**CBM** Curriculum Based Measurement

**DIBELS** Dynamic Indicators of Basic Early Literacy Skills

**DRA** Directed Reading Activity

**DST** Digital Storytelling

**DSTS** Digital Storytelling Strategy

**DVD** Digital Video Disc

**EFI** Effective Reading Instruction

**EFL** English as a Foreign Language

**EGRA** Early Literacy Grade Reading Assessment Toolkit

**ELD** English Language Development

**ELL** English Language Learner

**ESL** English as a Second Language

**ESLL** English as a Second Language Leaners

**EUODS** Educational Use of Digital Storytelling

**FGN** Federal Government of Nigeria

| | |
|---|---|
| **ICT** | Information Communication Technologies |
| **IDA** | International Dyslexia Association |
| **I_PRINT** | Individual Pupil's Reading Interest Tool |
| **IRA** | International Reading Association |
| **IRFACT** | Individual Reading Fluency and Comprehension Test |
| **L1** | First Language |
| **L2** | Second Language |
| **MFR** | Multidimensional Fluency Rubric |
| **MOOC** | Massive Open Online Course |
| **NEI** | Northern Education Initiatives |
| **NERDC** | National Education and Research Development Council |
| **ORF** | Oral Reading Fluency |
| **PDVD** | Portable Digital Video Disc Player |
| **PSN** | Persons with Special Needs |
| **PURED** | Pupils with Reading Difficulties |
| **RTI** | Research Triangle Institute |
| **SD** | Standard Deviation (statistics) |
| **SSR** | Sustained Silent Reading |
| **TABE** | Test of Adult Basic Education |
| **TESL** | Teaching English as a Second Language |
| **UKLA** | United Kingdom Literacy Association |
| **UNESCO** | United Nations Educational Scientific and Cultural Organisation |
| **UNICEF** | United Nation International Children's Emergency Fund |

**USAID** United State Agency for International Study

**WCPM** Words Correctly Read Per Minute

**WHOCREST** Whole Class Reading Screening Test

**ZPD** Zone of Proximal Development

## DEFINITIONS OF OPERATIONAL TERMS

**Digital Media:** Electronic sources of information, including the internet, DVDs and CDs, e-books and digital television.

**Digital Storytelling Strategy:** Content-Based Multimedia Storytelling Strategy

**Fluency**: Automatic decoding of a connected-text, at an appropriate rate, with proper expression necessary for comprehension.

**Interest:** Pupil's attitude revealed by the level of his attention, and engagement with a learning activity

**Multimedia** Digital contents that represents more than one medium of expression including images, audio, illustration, and graphics.

**Multimodal:** Instructional strategy that appeals to two or more communications paths.

**Persons with Special Needs:** Pupils at the risk of academic failure because of their inability to cope with general classroom instruction

**Pupils with Reading Difficulties:** Group of individuals reduced to unintelligent learners due to inappropriate instructional approaches and appropriate reading materials.

**Read Aloud**: An instructional strategy where teachers/pupils read text out loud.

**Reading:** A set of complex cognitive activities that allows individuals to understand both digital and print-based information.

**Reading Comprehension:** Reading, with active ability to construct meaning from the text predicated by responding correctly to the oral comprehension questions.

**Traditional Method:** Duster-chalk-board and teacher talk method of teaching.

# CHAPTER ONE
# INTRODUCTION

## 1.1 Background to the Study

Primary school education is a foundation upon which other forms of formal education rest. It is an instrument for mobility and a predicator for nation building (Olaniyan, 2008). Federal Government of Nigeria recognised this role as contained in Nigerian National Policy on Primary Education (FGN, 2013), to among other things inculcate permanent literacy; numeracy; and for the pupils to develop effective communication skills. The policy also aims to lay a sound foundation for scientific; critical-reflective thinking; promote patriotism; fairness; and more than anything else, to instil in the child, social and moral values for national unity right at the primary educational level.

In achieving these objectives, Primary Education in Nigeria is given free, but, compulsory to any school-aged individual. According to the Policy, teaching strategy in the primary schools should be participatory, exploratory, experimental and child-centred with a teacher-pupil ratio of 1:35. However, despite these policy statements, teaching in the public primary schools in the study area is anything than participatory, exploratory or child-centred. The teacher-pupil ratio in rural primary schools is over 100 and close to 200 pupils per teacher in most urban primary schools. Consequently, some pupils have not been able to cope with the learning situation, which leads to considerable number of pupils to graduate to post-primary school unable to read even in their native language. The consequences of allowing these teaming populations to continue to graduate unabated, to post primary school unable to read even in their mother tongue may constitute both social and security menace. The security menace of these teaming populations of unable readers may not affect the child alone but may affect the community

and the society in general. These, among many other reasons, justify the need to explore the Impacts of Digital Storytelling Strategies on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State.

Digital Storytelling is the contemporary expression of the ancient art of storytelling. The strategy integrates the use of digital devices and appropriate multimedia software (Erkaye, 2005; Baldwin & Dudding, 2007; Soleiman & Akbari, 2013; Nguyen, Stanley & Stanley, 2014; Abdolmanafi-Rokni & Qarajeh, 2014; Rani & Byrne, 2015). It is an emerging multimedia literacy that facilitates leaners to navigate different communication paths in classroom instruction. It also facilitates teaching in the classroom instructional purposes in the 21st century. This was because Warchauer & Ware (2008); and Coiro, (2003) hinted that any pupil who could not access and effectively use the emerging digital literacy of the 21st century is hampered in ways like those pupils who could not read in analogue era. Inevitably the proliferation of emerging multimedia technology has changed the way teachers communicate; the way they create meaning from different text-formats and even the way they teach (O'Rourke, 2005).

The concept of Strategy as adopted from Griffiths (2004) and (Olaofe, 2013) refers to techniques, actions, activities and tactics used during teaching. Hence, Digital Storytelling-strategy refers to use of sequential processes of Digital-Storytelling. This Strategy emanates in the late 1980s and early 1990s to integrate Digital-technology in teaching and learning (Robin, 2008, 2015; Harrison, 2011; Gordon, 2011; Suleiman, 2011; Chung, 2007; Silver-Pacuilla, Ruedel & Mistreit, 2004).

Ramalingam (2006) defines interest literally, as a manifestation of a type of experience associated with attention to an object, course of action or an enduring characteristic expressed by a relationship between the learner and learning situation. Technically, Wortman, Loftus & Weaver (1999); and Ryan & Deci (2000) define interest as enduring characteristics expressed by a relationship between a pupil and a learning activity. Hidi, (2000); Renninger, (2000); Allen (2013); Jozwik, (2015); and Shaffer, (2015) identify factors that influence pupils to have interest in reading to include the materials being meaningful, relevant, and written at an appropriate level of the learner. They also identify communicating the purpose for the reading to the pupils forms another factor. They reported that reading interest has a strong positive relationship with the success of pupils both in school and life (Jones & Carol, 2011; Taylor, Frye & Maruyama, 1990; Anderson, Fielding & Wilson, 1988; Stanovich, 1986). Evidently, the interest learners attached to any class activity predicts how much they would be actively engaged to it, and how well they would contribute to class discussion, and how much the pupils ask or respond to question in the class.

Formally, reading was considered by psychologist to be a natural extension of spoken language (Adams, 1990), but it was recognised later that learning to read is a challenging task particularly to struggling readers. However, in the present technology driven society, the concept of reading as a skill to understand written discourse has changed to include Digital Multimodal discourse of digital literacy. Consequently, in this study, reading is considered as a set of skills that allow individuals to understand both digital and print-based information.

National Reading Panel (2000); Rasinski, (2004); and Jibir-Daura, (2014) define reading fluency as an indicator of speed, accuracy and prosody of oral reading. This definition was based, considering the components of reading fluency that include, rapid and automatic word recognition. However, some scholars, such as Osborn et al (2003); Applegate, Applegate & Modla (2009) believe there remains no single agreed-upon definition for fluency.

Fluent readers read aloud effortlessly and with expression. Readers who are not yet fluent, read slowly, word by word, their reading is unnatural, but choppy and plodding. Likewise, they often have difficulty in reading comprehension (Kruidenier, 2002; Pang et al, 2003; Sherman, 2004; Hornstein, 2004; Hudson et al, 2005; Vaugh & Candace, 2009; Rasinski, 2011). This study recognises reading fluency as a bridge between decoding and comprehension skills. Hence, in this study, reading fluency is defined as the ability of a pupil to read a connected text accurately, at an appropriate speed, necessary for comprehension.

Reading comprehension is a process of constructing meaning out of information provided by a writer of the information. This could be either in form of traditional text form or digital discourse type. Reading comprehension has widely been recognised as the essence of reading and ultimate-goal of any form of reading instruction (Beatrice, 2008; Vaughn & Candace, 2009; Snowling, Cain & Oakhill, 2009; Jozwik, 2015).

Conventionally, reading difficulty is used interchangeably in the literature to refer to reading disability, reading disorder, or dyslexia (Mercer, Campbell, Miller, Mercer & Lane, 2000; Saskatchewan Learning Learning Learning, 2004; Wennersten, 2013;

Eklund, Torppa, Leppanen & Lyytineh, 2015; IDA, 2016; International Reading Association (IRA), 2012). As a result of this, different scholars defined pupils with reading difficulties (PURED) differently. For instance, Widyasagar & Bhogle (2015) define them as pupils at the risk of academic failure. Fuchs & Fuchs (2006) define PURED as pupils with learning difficulties. Ayodele, Okon, Ibimuluye, & Adebiyi (2013); Adebisi, Jerry, Rasaki & Igwe (2014). Omeda (2015); Chukwuemaka (2013); National Policy of Education (FGN, 2013) refer to pupils with reading difficulties as a group of persons with special needs.

However, in this study, pupils with reading difficulties are defined as group of special need pupils reduced to unintelligent learners due to inappropriate materials and instructional approaches. The challenges of these teaming populations of individuals stem from insufficient instruction, low socio-economic status and poor learning environment (Freeman & Freeman, 2004; Olaofe, 2001; Milne, 2005; Raponi, 2016). In addition, considerable number of these types of learners are mostly found in the rural public primary schools where reading is not encouraged.

Pupils with reading difficulties may sometimes be equated with dyslexic individuals. Therefore, it is very appropriate to state here that PURED are not purely dyslexic but probably may share certain characteristics. Dyslexic individuals have different brain connections that disrupt reading acquisition and they are noticed irrespective of the quality of reading instruction they had (IDA, 2016; Milne, 2005; Saskatchewan Learning Learning, 2004). In addition, Kormos, Sarkidi & Csizer (2009) and Kormos, (2015) asserts that regardless of geographical or socio-economic status of the learners, there is likelihood that, dyslexia affect two learners in every class of 20 pupils. Figure 1. 1. gives

a graphic representation between pupils with reading difficulties and dyslexic pupils to distinguish between the two.

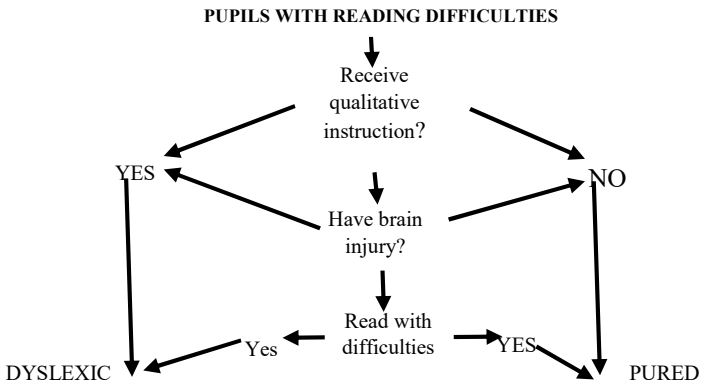



**Figure 1.1 Pupils with Reading Difficulties**

Figure 1.1 informs that a pupil is said to be PURED when he receives inappropriate reading instruction, has no brain injury, and has no access to appropriate reading material. While a dyslexic child is a pupil who receives and has access to appropriate materials but he still reads with difficulties.

The potential value of this study is so significant based on the recognition on one hand that, different individuals learn differently. Therefore, PURED require different approaches to match their learning domain. Hence, this study believes that Digital Storytelling Strategy may have positive impact on the reading fluency and comprehension by engaging PURED on their instructional reading activities. On the other hand, digital and visual literacy's today formed the 21st century wave of communication. This recognition made developed nations to direct their attention on the use of multimedia instructional strategies in teaching reading fluency and comprehension related skills right at primary level. This was based on the recognition that reading fluency with comprehension is the goal of any form of reading instruction (RTI, 2008; 2009; USAID, 2009). Also, the use of multimedia, at primary level encourage pupils to learn particularly

in the present rapidly changing information-based world (Peavler & Rooney, 2013; Signes, 2008; Egmon, Bauza & Moses, 2009; Mercer, Campbell, Miller, Mercer, & Lane, 2000; Olaofe, 2001; Pang, Angaluki, Elizabeth & Michael, 2003).

The study derives its inspiration from the results of the early grade reading assessment (RTI, 2011) conducted in Sokoto and Bauchi States. The study reported that even after four years of schooling, most pupils could not gain the reading skills necessary to read with comprehension in English. Dearth of literature on using digital storytelling for reading fluency forms another inspiration of this study. Available literature reviewed revealed that despite a proliferation of literature in other language related skills such as writing, vocabulary development, pupils' motivation, engaging reluctant readers and reading comprehension; not much is available on reading fluency and comprehension. Powell's motivational "Kids Need Structure" (2011) forms the third motivation for this study. Powell's (2011), in his inspirational TEDTALKS, states that if a child is not at the right reading level at third grade, he is a candidate for jail at 18 years of age. Powell added that "and we have the highest incarceration rate because we're not getting our kids the proper start in life". There are many empirical evidences supporting Powell's assertion (Olaofe, 2001; 2010; RTI, 2011; Garba, 2013) that in the public primary schools of the study area, many children are getting into post primary schools unable to read or write.

With these empirical evidences, two social implications were envisaged: one is socio-economic, and the other is national security. On the socio-economic aspect, any child who gets out of school unable to read or write at whatever age has already become liability to the state and the community as well. That kind of person could not employ anybody and as well could not be employed. Security wise, it is easier for the dropouts to be engaged

in criminal activities than those pursuing their education. These made Olaofe (2001) to posit that it is a greatest deformity for any primary education programme to succeed in making a pupil unable to read and write at the end of their primary school training period. The fourth inspiration for this study is an adage which states that "Give a man a fish and he eats for a day. Teach him how to fish and he eats for a lifetime". Applied to the field of language pedagogy, or specifically to this study, it might be interpreted to mean that if pupils are only read to in the class by their teachers, their immediate problem is solved. But if they are taught the strategy to learn how to fluently read with comprehension by themselves, they are empowered to manage their own learning. The provision of the NPE (FRN, 2013: 1) that education is constitutional right of every Nigerian including those pupils with special needs, forms another motivation for this study.

Turnspeed (2015) observes that, the only single quality business leaders look for in employees is creativity as against exam grades, forms another inspiration for this study. Turnspeed reports that 98% of children tested as creative geniuses at the age of five, decreased to only 2% after 20 years of traditional type of education. He added that with traditional approach, more time is spent on preparing pupils to pass standardized test only as opposed to learning more about the subject. Such type of education is diminishing the talent of the pupils and as well decreasing their opportunities to continue to think critically and creatively. He also observes that, in the 21$^{st}$ century creativity is the engine that drives innovation; innovation drives product creation; product creation drives manufacturing and service delivery which drive job creation; and job creation drives the economy.

Lastly, the fifth inspiration is a global inspiration based on the report of The National Institutes of Health that registered reading disability on the nation's list of ***"life-***

***threatening diseases"*** due to the devastating impact it has on the life of the citizens. Hence, Fielding, Kerr, & Rosier (1998) state the devastating Impact reading failure could bestow upon the life of not only the pupils but the entire citizens of a nation as well. Adams (1990) estimated that skilled reading requires between 1000 to 2000 hours of practices, both in school and out of school. If a child gets 30 minutes of reading practice each day in school, but no additional practice at home, that child would take over 10years to become a proficient reader. Similarly, Saskatchewan Learning (2004) elaborates that if reading intervention is delayed until nine years of age, approximately 75% of the pupils would continue to have difficulties in their academic career. International Reading Association (IRA) (2012); Shore & Debatini (2009); and No Child Left Behind (2001) also reported that reading skills for academic career should begin as early as primary four. These underlie the importance of reading fluency and comprehension for healthy citizens, nation building and the security of both the citizens and the nation at large.

## 1.2 Statement of the Problem

The major problem of this study is the over-dominance of traditional method in the study area, regardless of the learning-condition of the pupils. The limitations of this approach according to Aliyu (2003) include its unsuitability for large group; lacks information storage and retrieval functionalities for multiple usage. Also, the approach does not support illustrations to support learning. Furthermore, traditional method makes learning uninteresting in certain situations. This implies that, continues use of this approach in 21$^{st}$ century may no longer appeal the interest of pupils in reading. In this connection the Northern Education Initiative (RTI, 2011) reported that, 32.9% of pupils in Sokoto could not read any word of the story in one minute. The study added that, most of the pupils' oral reading fluency was insufficient for comprehension. Three years after this assertion, UNESCO (2013) recorded Sokoto State as one of the states with high percentage of (62%)

pupils out of school in Nigeria. This has forced many parents to withdraw their children from public to private primary schools. This trend is inimical to national security and socio-economic development of the nation. This is because only very few parents could afford to sponsor their wards in private owned primary schools.

Also, FGN (2013) stresses the need for equipping public schools with multimedia tools for effective instructional purposes (Adegoke, 2011; Abd-el-Aziz, 2014). However, these instructional gadgets are lacking in the public schools of the study area. This gives birth to increase disparity of the use of Multimedia between homes and public schools. This resource disparity, according to Olaofe (2013), demotivates rather than inspires the pupils to be actively engaged in teaching and learning activities. Furthermore, PURED constitutes what the National Policy on Education of Nigeria recognised as Special Needs Persons. These learners according to the policy should be inclusively instructed to provide equalise educational opportunities for all pupils irrespective of their disabilities (FGN, 2013). Furthermore, pupils with reading difficulties seem to be under studied, despite the constitutional provision for their early identification; monitoring; and provision of equal educational opportunities to function as meaningful citizens. Consequently, based on these problems, the researcher decides to explore the Impact of Digital Storytelling Strategy on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State. To achieve this, several objectives, research questions and hypotheses were formulated to guide the study.

### 1.3 Aim and Objectives of the Study

The aim of this study is to explore the Impacts of Digital Storytelling Strategies on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State of Nigeria. Accordingly, the objectives of the study were to:

1. find out the Impacts of Digital Storytelling Strategies on Interest of Pupils with reading difficulties in Sokoto State;
2. examine the Impacts of Digital Storytelling Strategies on Reading Fluency of Pupils with reading difficulties between genders in Sokoto State;
3. examine the Impacts of Digital Storytelling Strategies on Reading Fluency of Pupils with reading difficulties between location in Sokoto State;
4. analyse the Impacts of Digital Storytelling Strategies on Reading Comprehension of Pupils with reading difficulties between genders in Sokoto State; and
5. to determine the Impacts of Digital Storytelling Strategies on Reading Comprehension of Pupils with reading difficulties between location in Sokoto State.

**1.4 Research Questions**

The following five research questions were generated to achieve the objectives of the study.

1. Is there any significant difference in the level of interest between pre-and-post-test of pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State?
2. Is there any significant difference in the level of ORF between boys and girls with reading difficulty as the result of exposure to Digital Storytelling Strategies in Sokoto State?
3. Is there any significant difference in the level of ORF between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State?

4. Is there any significant difference in the reading comprehension level between boys and girls with reading difficulty as the result of exposure to Digital Storytelling Strategies in Sokoto State?
5. Is there any significant difference in the level of reading comprehension between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State?

**1.5 Null Hypotheses**

The following null hypotheses were formulated from the research questions as guide to the study and tested at $\alpha \leq 0.05$ significance level.

1. There is no significant difference in the level of interest at pre-and-post-tests of pupils reading difficulties exposed to Digital Storytelling Strategies in Sokoto State.
2 There is no significant difference in the level of reading fluency between boys and girls with reading difficulties as the result of exposure to Digital Storytelling Strategy in Sokoto State.
3 There is no significant difference in the level of reading fluency between rural and urban pupils with reading difficulties as the result of exposure to Digital-Storytelling Strategy in Sokoto State.
4 There is no significant difference in the reading comprehension level between boys and girls with reading difficulty as the result of exposure to Digital-Storytelling Strategy in Sokoto State.
5 There is no significant difference in the level of reading comprehension between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State.

## 1.6 Significance of the Study

The present research could be of great benefit to pupils with reading difficulties their parents, members of the community, and international stake holders concerned with early grade reading assessment, as well as teachers training institutions. The study offers reading fluency and comprehension programme as an empowerment tool for pupils with reading difficulties. The aim of the study being to empower the Pupils with reading difficulties (PURED) to read fluently with a desirable speed and accuracy as a step towards developing their reading comprehension via digital storytelling Strategy. With this intervention, it is believed the pupils would acquire necessary training to bridge the achievement gap between their peers. By this means this intervention may serve as a license for the pupils to continue with their education for living a meaningful life in the society.

The study also provides primary school teachers with diagnostic and screening tests and reading fluency and comprehension monitoring strategy. The study believes that, with these tools, the teachers would suitably identify and have a means of keeping the pupils 'weekly or end of the term reading fluency and comprehension gains of their pupils. This allows the teachers to measure the effectiveness of their instructional Strategies and the level of pupils' learning capacity handy.

The study hopes to be beneficial to reading instruction teachers in the areas of planning reading fluency and comprehension intervention to accommodate pupils with reading difficulties via Digital Storytelling Strategy. This was believed to improve the lots of the teachers in developing the fluency and comprehension of pupils with reading difficulties. Also, the findings of the study could be of great significance to both national and

international organisations such as TET Fund, UNDP, UNESCO, USAID, International Dyslexia Association, RTI, and Global Reading Network. The findings of the study could also be significant to teacher training institutions; English language curriculum planners and English language publishers in the areas of reading intervention for pupils with reading difficulties through workshops and conferences. Similarly, the findings of the study are expected to serve primary school teachers, as a research input, to adopt the strategy of study where necessary in teaching their pupils specifically, in the study area, and Nigeria, at large.

### 1.7 Scope and Delimitation of the Study

The thrust of this study is to explore the Impacts of Digital Storytelling Strategies on Interest, English Reading Fluency and Comprehension of pupils with reading difficulties in Sokoto State. The study was conducted in Tambuwal Local Government Area, in Tambuwal Educational Zone being the educational zone of the research. Therefore, the selection of the zone was to serve as a community development on the part of the research to leave a footprint in literacy development of pupils identified with reading disabilities in his community.

The study uses Static Group Pre-test and Post-test Design. The design was employed due to the outcome of the Whole Class Reading Screening Tests based on the recommendation of Hasbrouck & Tindal (2006). Hasbrouck & Tindal recommend that where more than half of the population score unsatisfactory comprehension score of between 0-39 marks, all the participants require reading fluency and comprehension intervention. The screening tests reveal that more than 50% of the sampled population could not score 50

and above marks. Hence, the study employed none control pre-test, post-test quasi-experimental design.

The study has a sample of 94 participants drawn from two public primary schools – one each from rural and urban locations. The age bracket of the target population is between the ages of twelve to fifteen years. The duration of the study last for thirteen weeks. The participants were selected employing Screening method using Whole Class Reading Comprehension Screening Tests (WHOCREST). The schools were purposively selected based on their homogeneity in respect to curriculum, teaching approach, and the minimum qualification of the teachers. The participants were exposed to content-based digital stories employing multiple strategies. These include weekly baseline assessment, mental imagery, partner-reading, and repeated reading aloud.

The theoretical base of the study tagged as DSTS Multimedia Repeated Reading Theory. The theory was fashioned out by way of eclecticism from two theories. The theories are Samuels (1979; 2013) repeated reading techniques; and Mayer & Moreno (1999) Cognitive Multimedia Learning Theory. The study delimits its scope to primary five pupils in the public primary schools reading with difficulties. The aim of the study was to explore the Impact of Digital Storytelling Strategy on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State. Summary of the major works reviewed according to author, aspect reviewed, and aspect borrowed in the preceding section is contained in Table 1.1.

**Table 1.1 Summary of the major works reviewed in section one**

| Author | Aspect Reviewed | Aspect Borrowed |
|---|---|---|
| Griffiths (2004) | Language learning Strategy | Strategy |
| Olaofe (20013) | | |
| Ramalingam (2006) | Dictionary of psychology. | Definition of interest |
| Jozwik (2015) | Effects of explicit reading comprehension Strategy instruction for English learners with specific learning disabilities. | How influence pupils to have interest in reading |
| Shaffer (2015) | Bilingual Latino high school boys' reading motivation: Seven case studies examining factors that influence motivation to read. | |
| Olaofe (2001) | A key note addresses. | Pupils with reading difficulties |
| Milne (2005) | Teaching brain to read. | |
| Raponi (2016) | Students with interrupted formal education: teachers' perspectives. | |
| Kormos (2015) | Massive Open online learning courses on dyslexia and foreign language teaching. | |
| IDA (2016) | Dyslexia in the classroom: what every teacher needs to know. | |
| Saskatchewan Learning (2004) | Teaching students with reading difficulty and disabilities: a guide for educators. | |
| Mitsikopoulou (2014) | English and digital literacies: how to develop a digital story- procedure and tools. | |

# CHAPTER TWO

# LITERATURE REVIEW

The thrust of this study is to explore the Impact of Digital Storytelling Strategy Interest, Reading Fluency and Comprehension among Primary Five Pupils with reading difficulties in Sokoto State of Nigeria. This chapter covers Definition, Concepts and Types of Digital Storytelling Strategies and Techniques for Integrating Digital Storytelling Strategy into the Classroom. Other topics include Procedures for Integrating Digital Storytelling Strategies into the Classroom, Readability Scores, Mobile Learning, Devices and Software for Digital Storytelling. Furthermore, the review discusses Digital Storytelling on Pupils' Reading interest, Digital Storytelling on Pupils' Reading fluency and comprehension, and types of reading fluency, Impact of reading fluency and comprehension. Then the review highlights factors contributing to reading difficulty, characteristics of pupils with reading difficulties, best instructional Strategy for pupils with reading difficulties. Lastly, the review explains reading assessment for pupils with reading difficulties, reviews of previous studies, and the chapter ends with a presentation of the theoretical frame work of this study.

## 2.1 Digital-Storytelling: Definition, Concept, and Types

Digital Storytelling (DST) was defined by the Digital Storytelling Association (2011) as a modern expression of ancient art of storytelling. However, the review discovered that majority of the scholars in the area define digital storytelling differently based on their different point of views. For example, Jones, Barbara & Suzanne (2006) define DST as digital literacy. Hersh, (2011); Smeda, (2014) and Psomos & Kordaki (2012) define DST as Multiliteracy strategy. Hung, Hwang & Hung (2012) define Digital Storytelling as an integrated application of multimedia that aids learners to become engaged in their learning situation. Meadows (2010); Clemens & Kreider (2011); Angay-Crowder, Choi

and Yi (2013) and Kim (2015) define digital storytelling as first-person narrative combined with a variety of media including images, audio, and videos to convey instructional objectives. Abdolmanafi-Rokni & Qarajeh (2014) and Nirchi, (2014) averred that digital storytelling was defined as an integration of traditional storytelling with digital technology to produce a multimodal text. To this end, and with the consideration of the objectives of this study, digital storytelling was defined as Content-Based Multimedia Storytelling Strategy.

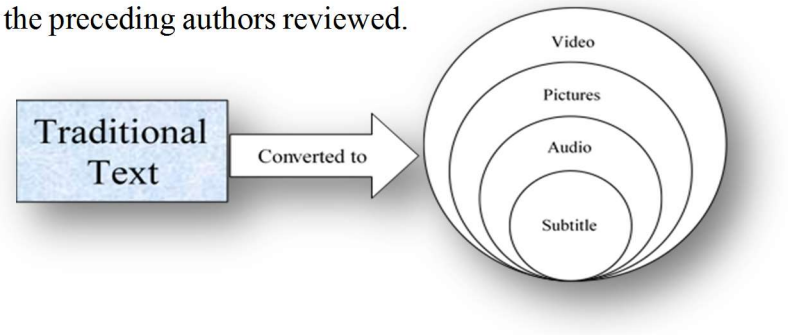
The pedagogical value of digital storytelling is its power in helping learners become engaged in the learning situation (Cassell, 2003; Berk 2009; Collins & Madigan, 2010; Hung, Hwang, & Huang, 2012; Yoon, 2013). The major components of DSTS include visual images, written texts, recorded audio narration, and music background where necessary. Digital storytelling emerged over the last few years as a powerful teaching and learning tool that engages both teachers and their pupils in teaching and learning situations. DSTS has proven to be a powerful instructional strategy suitable across curriculum and learners. It is particularly powerful tool in developing pupils' creativity, innovation, communication, collaboration, and information fluency among others (Clemens & Kreider, 2011).

According to the available literature digital storytelling strategy was pioneered by Lambert & Ashley in 1993 in a centre called Digital Story Centre (Suleiman, 2011; Zhou & Siriyothin, 2009; Chung, 2006; 2007; Banaszewski 2005). The centre initially trains people on how to create personal types of digital storytelling. However, with time it was realised that people also wanted to develop digital stories which address social conflicts, political and educational issues. Digital storytelling revolves around two skills: having a

story to tell and the ability of manipulate variety of digital elements (Robin, 2008; 2006; Tendero, 2006; Chung, 2007; Signes, 2008; Tatum, 2009; Reyes, Pich & Garcia, 2012).

Multimodal text refers to those text type that appeal to multiple communication paths (Dalton & Proctor, 2008). Robin (2015) posits that Digital Storytelling Strategy "ranges from personal tales to the recounting of historical events, from exploring life in one's own community, to the search for life in other corners of the universe, and literally, everything in between". This realisation made Digital Storytelling Strategy to go beyond personal storytelling to an effective teaching tool for life-long human development across different subject matter and across different educational levels.

Pedagogically, there are two different classifications of digital storytelling Strategy. These include learner generated described as first-person narrative told in the writer's spoken voice (Clemens & Kreider, 2011, Kearney, 2011; Robin & McNeil, 2016). The second classification of digital storytelling strategies is teacher generated (content-based) digital storytelling (Chung, 2007; Figg & McCartney, 2010; Yeh, 2014; Smeda, 2014; Suwardy, Pan & Seow, 2013; Green, 2013). Teacher-generated type of digital storytelling is the focus of this study. Figure 2.1 gives a conceptual illustration of digital storytelling as described by the preceding authors reviewed.




**2.1 Conceptual Description of Digital Storytelling**

Figure 2.1 illustrates that digital storytelling is the conversion of traditional text to a single entity of multimedia texts with the aid of editing software. This allows both teachers and learners to be engaged in the general concept of 21st century literacy skills and operations (Bull, & Bell, 2005).

## 2.2 Digital Storytelling Strategies in the Classroom

Green, (2013); Robin & McNeil (2016) and Suwardy, Pan & Seow (2013) report that there are two broad-techniques in which digital storytelling strategy could be integrated in the classroom. One of the techniques known as leaners generated content, involves learners to create their own digital story as means of learning certain curriculum specific subjects. The second technique known as teacher-generated, which the present study termed as content-based digital storytelling are created by teachers for teaching and learning purposes. These two strategies are effective, particularly as assistive means to encourage the pupils to carry learning activities beyond school environment. The techniques also inspire, engage and motivate pupils, both with or without related learning difficulties to concentrate and actively take part in the learning activities, therefore being inclusive in nature.

In adapting any of the two DSTS techniques above, there involved three categories to consider. The first category involves the use of single-image-digital storytelling. This is an elementary activity for younger learners, and this is often used for motivational campaigns by bloggers. The second category is content-based Digital Storytelling where a passage from Pupils' textbooks is used to produce a video clips as a learning strategy. Mostly, this is suitable for reading instructional purposes, particularly to pupils with reading difficulties. This was based on research evidences that the use of multimedia in

teaching disable learners help them to retain additional information and aids their comprehension of difficult material (IDA, 2013). The last category is learners' generated or personal storytelling which is an advanced level of digital storytelling suitable for tertiary students. This is also suitable in teaching writing related skills (Clemens & Kreider, 2011).

### 2.3 Procedure for Using Digital Storytelling Strategies in the Classroom

This section attempts to review available literature on the procedure for creating Digital Storytelling clips. The aim is to identify gaps in the previous studies to be filled in this study. The section is particularly interested in providing a workable approach for creating Digital Storytelling for accommodating pupils with reading fluency and comprehension skills via the Strategy. The review begins with the procedure advanced by the centre for Digital Storytelling. Formerly, The Centre for Digital Storytelling (CDS) identified seven elements (Gordon, 2011; Mitsikopoulou, 2014; Robin, 2015) as a framework for the centre's training workshop for personal-narrative types of Digital Stories. These elements are presented in Table 2.1.

**Table 2.1 Seven Elements of Digital Storytelling**

| No | Elements | Description |
|---|---|---|
| 1 | Point view | What is the main point of the story and what are the perspectives of the author? |
| 2 | Dramatic question | A key question that keeps the viewer's attention and will be answered by the end of the story. |
| 3 | Emotional content | Serious issues that come alive in a personal and powerful way and connects the audience to the story. |
| 4 | The gift of voice | A way to personalise the story to help the audience understand the context. |
| 5 | Power of the soundtrack | The music or other sounds that support and embellish the story. |
| 6 | Economy | Using just enough content to tell the story without overloading the viewer |
| 7 | Pacing | The rhythm of the story and how slowly or quickly it progresses. |

Source: **(Mitsikopoulou, 2014)**

Table 2.1 presents seven elements necessary for creating Digital Storytelling as a blueprint for creating individual experience types of Digital Storytelling. With this framework, CDS intends to help people with personal stories to be guided with these elements. The elements begin with point of view and ends with pacing.

However, with Digital Storytelling being integrated into the classrooms for different educational purposes, across age, gender and subject matter, a need arises for a suitable procedure. Lambert, founder of Centre for Digital Storytelling therefore, asserts that "the metaphor of "Steps," rather than "Elements," would more practically guide storytellers along the path of creating a pedagogical Digital Storytelling strategy (Lambert, 2010: 9). This modification, put to silence, the seven elements of Digital Storytelling Strategy, giving birth to the metaphor of "steps" presented in Table 2.2.

**Table 2. 2: Modified Steps for Digital Storytelling Strategy**

| **Steps** | **Description** |
|---|---|
| Owning the story | What is the story you want to tell? What do you think your story means? |
| Owning the emotion | What emotions did you experience? |
| Finding the moment | What was the moment when things changed? |
| Seeing the story | What images come to mind when recalling the moment of change in the story? |
| Hearing the story | In digital stories, voice not only tells a vital narrative, but it also captures the essence of the narrator and their unique character. |
| Assembling story | How are you structuring the story? And, within that structure, how are the layers of visual and audio narratives working together? |
| Sharing story | How is the final piece to be shared? |

**Source: Lambert, 2010**

In Table 2.2 questions were the driving force, guiding individual in accomplishing their personal Digital Stories. The two procedures reviewed in Tables 2.1 and 2.2 inform the initial frameworks for DSTS. It is also very important to note that, the two procedures are specific in producing Digital Storytelling for telling personal life experiences, for motivational purposes, which is not the focus of this study. Table 2.3 presents Sadik (2008) approaches for creating Digital Story clips.

**Table 2.3 Four Steps Approach for Digital Storytelling**

| Steps | Processes |
|---|---|
| 1. Define, collect and decide | 1. Select a topic for your Digital Story<br>2. Create a folder on the desktop<br>3. Search for image resources for your story<br>4. Locate audio resources such as music<br>5. Begin thinking of the purpose of your story |
| 2. Select, import and create | 1. Select the images you would like to use<br>2. Select the audio for your digital story<br>3. Import images into Photo Story<br>4. Import audio into Photo Story<br>5. Think of number of images to use |
| 3. Decide, write, record and finalize | 1. Decide on the purpose and point of view of the Story<br>2. Write a script<br>3. Record the narration of your script<br>4. Import the narration into Photo Story<br>5. Save content as a Windows Media Video (WMV) file |
| 4. Demonstrate, evaluate and replicate | 1. Show your digital story to your peers<br>2. Gather feedback about how the story could be improved<br>3.Help other groups on how to create their own DSTS |

**Source: Sadik (2008)**

Table 2.3 presents procedure for creating Digital Storytelling, with a series of processes. The procedure is technically perfect, the only limitations of the procedure regarding this study, include the emphases on script writing and the WMV format which may not be suitable for android mobile devices. However, the aspect of narration is very much relevant, as one of the focus of this study is enhancing reading fluency and comprehension

of pupils with reading difficulties in the study. Robin & McNeil (2016) outlined five steps as procedure for an Educational Digital Storytelling presented in Table 2.4.

**Table 2.4. Digital Storytelling Procedure**

| Steps | Processes |
|---|---|
| 1. Choose a topic | a. Identify the purpose and the audience<br>b. Write script with clear purpose, clear point of view. |
| 2. Sourcing for digital resources | a. Source for images to be used in the story.<br>b. Source for audio to be used in the story<br>c. Title and audio-visual transitions. |
| 3. select content and develop storyboard | a. Develop a storyboard to provide a textual and visual overview of the intended story. |
| 4. Import, record and finalize | a. Record the voice over of the script and<br>b. Import the recording.<br>c. Add titles and transitions to audio visual elements<br>d. Preview the story, and save the Digital Story |
| 5. Share your story and teach others about digital storytelling | a. Teach others about Digital Storytelling Strategy<br>b. Think how the story could be improved and be used educationally. |

**Source: Robin & McNeil (2016)**

Table 2.4 represents procedure for integrating Digital Story into the classroom. The procedure involves five steps with emphasis on script writing, which would be more suitable in developing pupils writing skills and that is not the occupation of this study. This lack of suitable procedure thereby necessitated a need for a different procedure.

Mitsikopoulou (2014) charted seven steps for creating Digital Stories. These steps are presented in Table 2.5.

**Table 2.5 Steps in Creating Digital Story**

| Step | Description |
|---|---|
| 1. Script writing | If the story is from primary school text books, there is no need for a script. |
| 2. Images | Source for images |
| 3. Add text | Decide if there is need to caption some of the images |
| 4. Audio recording | Record the voice-over using external or built in microphone. Record only short section at a time in a quiet environment. |
| 5. Background music | Where necessary use copyright free music (optional) |
| 6. Credits | Acknowledge all the group members and other members of the community who helped in the creation of the digital story. |
| 7. Share | Share with colleagues and friends. |

**Source: Mitsikopoulou, (2014)**

Table 2.5 presents seven steps for creating Digital Storytelling by Mitsikopoulou (2014). Steps one suggests script writing, or a passage from pupils' textbook where necessary. Topic selection, identifying the audience and purpose of the story are impliedly captured in step four. One striking differences with the previous Tables one to five is the suggestion that pupils' textbooks could be used for Digital Storytelling, which this study adopted. However, what is missing in this procedure is adding the subtitle of the selected text to model pupils' reading. Similarly, in view of the focus of this study, step four, six and seven were adopted to create an appropriate procedure suitable for this study.

Morra (2014) opines that Digital Storytelling is an inclusive strategy that could be used in all curriculum-content areas and at all level of education to teach the three Cs of 21st century skills known as Collaborate, Create, and Communicate. This strategy is graphically illustrated in Figure 2.2.

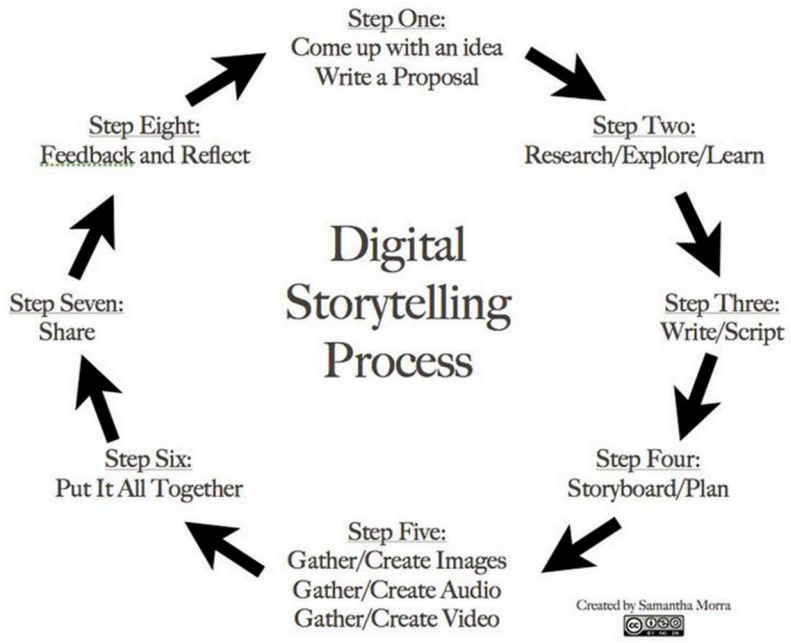



**Figure 2.2 Morra's Eight Steps for Digital Storytelling Strategies**

Figure 2.2 illustrates that Digital Storytelling process is cyclic than linear in nature, that begins with coming up with an idea and ends with feedback and reflection. Impliedly, Morra's eight steps shares similar view with previews procedures emphasising on script writing, which is not the focus of this study. This also, informs the need for a different procedure to cater for pupils with reading difficulties. Bull & Kadjer (2004) has a seven steps procedure. The procedure includes writing a script, planning an accompanying storyboard, discussing and revising the script, sequencing images in the video editor, adding narratives, adding audio-visual effects and transitions, and lastly adding soundtrack. Like in the previous procedures, Bull & Kadjar's procedure is inclined more on writing skills probably with adult learners. This study focussed on primary five pupils

struggling with reading difficulty. This justify the need for a suitable procedure for reading fluency and comprehension. Adobe (2008) sketched seven steps to developing digital storytelling presented in Table 2.6.

**Table 2.6: Seven Steps of Digital Storytelling Strategy**

| No | Phase | Step | Description |
|---|---|---|---|
| | Pre-production | 1.Writing the script | The script about how the topic touched the author's life |
| | | 2. Planning | This is storyboard creation step. |
| | | 3.Organization | Sourcing and managing the multimedia elements for the project. |
| | Production | 4.Voice-over | At this stage, the text need to be performed, rather than reading. |
| | | 5.Editing the multimedia resources | Each multimedia element chosen is meant to decorates, illustrates and illuminates the message of the narrative text. |
| | Post-production | 6.Finalizing | If Adobe premiere is used: Rough cut and final cut – two elements of the software. |
| | | 7.Sharing | Distributing the final product |

**Source: Adobe (2008)**

Table 2.6 shows seven different processes for creating Digital Storytelling. The table puts these steps under three phases. In classroom situation, only the pre-production phase could be carried without the aid of digital devices. The other two phases – production and post production phases require digital devices. Except script writing, all the remaining steps would be adopted to serve the purpose of this study. Table 2.7 is the six steps by Jakes & Brennan (2005) under three phases: in the classroom, computer laboratory, and any other place.

**Table 2.7 Six Steps of Digital Storytelling Strategies**

| Phase | Step | Description |
|---|---|---|
| In the classroom | Written Text | DST begins with a written text. It is important that the text has a central theme for the viewers to relate with the story. |
| | Script | Script forms the foundation for the placement of various multimedia elements to create the DST |
| | Storyboard | This provides positions for the placement of different multimedia elements. |
| Computer lab | Locating multimedia | pupils source for multimedia elements for their project |
| | Creating the DST | pupils put together the multimedia elements to finally create DST |
| Any other place | Sharing | Learners should be encouraged to share their work in the class or online. |

**Source: Jakes & Brennan (2005)**

Table 2.7 informs that written text is the main ingredient for Digital Storytelling Strategy. This procedure would best be suitable for adult learners in creating type one category of Digital Storytelling for developing their writing skills. Regrettably, the interest of this study is on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State. Lack of suitable procedure for reading related DSTS necessitated the need to sort further for a suitable procedure.

Sargent (n.d) modelled a six-step procedure for creating Digital Storytelling. She asserted that pupils' narration of their stories is the heart of Digital Storytelling Strategy. As a procedure, pupils begin identifying their audience; write their script; revise, making sure to add descriptive words and correct misspellings. They also organize all the multimedia elements sourced for the project; practice reading aloud multiple times before finally recording the voice-over as the narration of the story. According Sargent (n.d) improved reading fluency and comprehension are linked to repeated practice.

However, step two emphasises "writing the script" and could be replicated with some modification in this study. The assertion that pupils' narration of their stories is particularly the heart of Digital Storytelling Strategy. As a procedure, pupils begin their journey to good Digital Story by first identifying an audience and purpose for their story as a first step. She also recommends that pupils could practice reading aloud multiple times of their story before finally recording the voice-over as the narration of the story (Sargent, n.d). This aspect is worthy of borrowing for this study. She added that, the practice of reading aloud repeatedly improves reading fluency, word recognition and comprehension is linked to repeated practice of reading. In addition, Sargent considers assessment of the final project as part of the procedure using rubric. This is very important aspect of education Digital Storytelling Strategy; however, this study did not use rubric as an assessment tool since the pupils were only exposed to a ready-made Digital Storytelling.

Finally, Miller (2009) outlines eight steps when working with a limited number of computers. The steps include identify a personal story; writing an initial story script; planning a storyboard to accompany the script; and discussing the script with peers and

revising. The steps also comprise importing images and sequencing them in the video editor; adding the narrative soundtrack, special effects and transitions; and finally adding a musical soundtrack, which is often optional. Miller's eight steps could be effective for developing pupils writing skills just like many other procedures reviewed. However, the aspect of the procedure that involves sourcing and adding audio-visual elements may be adopted in this study.

In summary, this section reviews authors and their approaches to creating digital stories. From the review, this study learnt two major lessons: one, almost all the approaches were inclined towards developing "writing" skills. Therefore, leaving a space on a procedure of how to create and use Digital Storytelling for reading related skills to pupils with reading difficulties. Secondly, the review reveals that there could be two approaches to Digital Storytelling. These include 1st and 3rd person approaches in creating DSTS. In the first-person approach, the narrator uses his personal experience to tell a story for recreational and motivational purposes. This approach could also, be very effective tool for teaching and in engaging adult learners in developing their writing-related skills. The U. G Third Person Approach (2018) on the other hand, is the content based approach suitable for teaching curriculum-based activities. The approach could be very effective also in assisting young learners with related learning problems, particularly reading related problems, and that procedure was found to be lacking in the literature.

Based on this assertion, this study developed a 3rd person approach for creating pre-made digital storytelling for teaching in the primary and junior secondary schools to fill the identified gap. The U. G. Third Person Approach allows the use of selected passages from pupils' texts – across curriculum – be it whatever curriculum-based specific subject to be

rendered into digital storytelling text. The 3rd person approach is a synthesises of the elements adopted from the previous studies reviewed. The procedure was tagged as U. G. Third Person Approach for digital storytelling for pupils with learning related difficulties. The procedure is presented in Table 2.8.

| S/N | Steps | Description |
|---|---|---|
| 1 | Identify the needs of the pupils | Identify the area where the pupils need assistance. Areas such as reading fluency and comprehension, vocabulary development, or any curriculum-based subject specific area |
| 2 | Select a passage | Based on the reading ability of the learners, select a passage or passages from their text book to be converted into DSTS |
| 3 | Practice performing the text | Practice reading the passage many times aloud to master the performance and emotional tones of the text. This should be in accordance with the prescriptions of the subject area. |
| 4 | Planning | Teacher should plan the arrangement order of the textual and audio-visual elements based on the content of the passage. |
| 5 | Source digital elements | The images could be sourced using still or video camera, family album, scanner, and where necessary copy-right free internet materials. There is no limit to number of image, but the teacher has the right to decide on the number to use for a 2 to 3 minutes clip |
| 6 | Audio Recording | Record the voice over preferably using an external microphone after mastering the performance needs of the passage |
| 7 | Import & edit the digital elements | Import the digital elements into the any chosen video-editing software. This study used Pinnacle Studio 19. Edit and review the digital elements added appropriately. |
| 8 | Add subtitle | Add subtitle in the time-line to assist the pupils reading along as he watches the clip. Decide the appropriate video file format to create –such as MP4, DVD, CD, based on the available mobile devices of the learners |
| 9 | Giving credit | In the time-line, acknowledge all the contributors and the sources of the element used, then finalise. |
| 10 | Finalise and share | Render and finally, export the created DSTS into a video file format, preferably MP4, for easy sharing both in the school and online. |

**Table 2.8 U. G. Third Person Approach for Content-Based Digital Storytelling Developed by the Researcher, (2018)**

Table 2.8 presents U. G. 3rd Person Procedure for Content-Based Digital Storytelling Strategies. The content-based DSTS is an inclusive strategy suitable for both young and adult learners with reading difficulties. The procedure is one of the major contributions to learning of this study, because it has filled a vacuum for a suitable Content-based DSTS procedure for reading developmental skills and curriculum-based specific subject related works. Table 2.9 contains major works reviewed in the previous sections.

**Table 2.9 Summary of Major Works Reviewed in Sections 2.1 to 2.3**

| Author | Aspect Reviewed | Aspect Borrowed |
|---|---|---|
| Gordon (2011) | DST in the classroom. | DST in the classroom |
| Harrison (2011) | DST: A multimodal wonderland. | |
| Robin 2015 | A Powerful Technology Tool for the21st Century Classroom. | |
| Suleiman (2011) | DSTS to sharpen language skills. | Concept and types of DST |
| Smeda (2014) | Creating constructivist learning environment with digital storytelling. | |
| Abdolmanafi-Rokni & Qarajeh (2014) | DST in EFL Classrooms: The Effect on the Oral Performance | |
| Nguyen; Stanley, & Stanley (2014) | Storytelling in Teaching Chinese as a Second/Foreign Language. | |
| Lambert (2010) | DSTS cookbook. | Procedures for Digital Storytelling and the evolution of its software |
| Sadik (2008) | DST: a meaningful technology-integrated approach for engaged student learning. | |
| Robin (2015) | The Educational Uses of DSTS. | |
| Morra (2014) | 8steps of great digital storytelling. | |
| Adobe System Incorporated (2008) | DSTS and video guide | |
| Bull & Kadjer (2004) | DSTS in the language Arts classroom. | |
| Jakes & Brennan (2005) | Capturing stories, capturing lives: an introduction to digital storytelling. | |
| Sargent (n.d) | Lifelong literacy with digital storytelling Strategy. | |
| Miller (2009) | Digital storytelling. A graduate review submitted to the elementary education division of curriculum and instruction. | |
| Robin & McNeil (2014) | The evolution of DST technologies: From pcs to iPads and e-books. | |

## 2.4 Mobile Learning, Devices, and Software Applications for Digital Storytelling

Digital Storytelling is a multimedia text, amiable to different facets of digital technology such as internet, through personal and digital mobile devices. This section intends to review mobile learning, devices, and different software applications educators used in creating Educational Digital Storytelling for their pupils. Mobile learning is activity base. It is an emerging learning trend that takes place with digital mobile devices (Schofield, West & Taylor, 2011; Singh, 2011; Piper, Jepkemei, Kwayumba, & Kibukho, 2015; Cherian & Williams, 2008; Adedoja & Oyekola, 2008). The essence of mobile learning is to make the learning process more flexible, accessible and personalised. Conceptually, mobile learning, according to Adedoja & Oyekola (2008), is an aspect of educational technology and educational technology is viewed as the combination of two terms: "Technology of education and technology in education". The former refers to systematic and scientific procedures in educational practices, while the latter, emphasises the use of digital technology in teaching and learning activity. The range of mobile devices (Schofield et al, 2011) has been placed into four major classifications. These include personal and portable, static but personal, portable and shared, and lastly personal but static. However, the focus of this study falls within the range of portable and personal mobile devices such as mobile smart phones, mini-tabs, P-DVD, iPads and Tablets.

Digital-mobile-learning devices, unlike other types of digital devices, such as personal computer, are more affordable and accessible especially when learning with technology in the rural or remote areas (Singh, 2011; Piper et al, 2015). Critten & Kucirkove (2015) reported that Mobile devices are gaining prominence in the education space because of their portability, low cost and availability and are used seamlessly and without disruption in classroom situation. They added that, historically, pupils with learning disabilities

have been the early adopters of educational technology to facilitate their learning. The remainder of this section focuses on editing software available for Digital Storytelling across three flat forms of Personal computer, web-based and mobile devices.

Editing software for Digital Storytelling are categorised into three groups: The first group are those that could be installed in either computer laptop or desktop. These include Photo Story 3, Windows Movie maker, Adobe Photoshop Elements, and iMovie Microsoft PowerPoint. The second group comprises of Web 2.0 Tools used for communication, collaboration, productivity, presentation and social networking. The most popular one in this group are VedioScribe, and YouTube. The less published WEB 2.0 Tools include Animoto, Loopster, Prezi, Voki, Wevideo, Xtranormal. Other Web 2.0 Tools include LittleBird Tales, My Storymaker, Storybird, StoryJumper and Voki. The third category comprises those that could be installed on mobile devices such as iPads and smartphones. Among these are storykit, storyrobe, iTalk, fotobabble, ReelDirector, Viva Video, and Videolicious, Cyberlink PowerDirector for tablets, and Pinnacle Studio Pro for iPad. It however should be noted that, this list is far from being exhaustive one, as many software are being developed almost daily, to meet the need of the rapidly changing communication-technology based world.

Similarly, Di Blass (2015) reported that there are many tools for learners to create Digital Stories. One of them is Camtasia, a software suite for creating video tutorials and presentations directly by screen capture. The screen area to be recorded could be chosen freely, and audio or other multimedia recordings may be recorded at the same time or added separately from any other source and integrated in the Camtasia Studio component of the product. Other examples of screen-capturing tools are Educreations a recordable

interactive whiteboard that captures voices and handwriting. Slidestory is application software for Digital Storytelling Pinnacle studio 19 also has a screen capture application called Live Screen Capture. Studies reported using mobile devices for instruction include Gromik (2015) who investigates the use of smart phone video camera. He engaged 67 (59 boys and eight girls) EFL undergraduate students at Tohoku University, Japan to produce Digital Stories of their personal experience. The participants were tasked to produce a weekly 30-second video for 12 weeks. The participants were encouraged to view their peers' videos but not to evaluate them openly. The outcome of the project was that, participants perceived some degree of improvement with their ability to use the video recording feature on their phone. Some 98 per cent of the students believed that the weekly video production activity improved their English-speaking abilities, and all participants believed that the task enabled them to improve their confidence level. Gromik (2015) verified the amiability of creating Digital Storytelling using mobile devices, taking the advanced category of Digital Storytelling suitable for graduate students to tell their personal stories, which is not the intention of this study. Secondly, Gromik used university students for his study, whereby this study is directed to primary five pupils with reading difficulties. Thirdly, Gromik's study was conducted in Japan, while the location of this study is Sokoto State of Nigeria. None the less, the study is relevant to this study for it informed the suitability of Digital Storytelling across curriculum, age and gender.

In conclusion, this section reviews the concept of mobile learning, types and categories of mobile devices, and available software for Digital Storytelling according to their classification. The mobile devices relevant to this study include any mobile device that fall within of personal and portable types. ***Pinnacle Studio 19***, purposely purchased

online for this study, was used to produce the Content-Based Digital Storytelling employing DSTS 3rd Person Approach.

### 2.5 Digital Storytelling on Pupils' Reading Interest

Interest plays very important role in reading instruction and on pupils' text processing. Three factors according to Haravkiewicz & Hulleman (2010) contribute to the development of interest: knowledge, positive emotions and personal values; and these are cyclic in nature. For instance, through engagement with learning activities, learners become more skilled, competent, and knowledgeable; the more competent the more they positively respond, and the more the learning activities become personally relevant.

Contemporary interest theorist identified two approaches involved in investigating the role of interest in learning: Individual interest and situational interest approaches (Hidi, 2001). Individual interest approach focussed on individual personal interest, a disposition that individuals take with them from place to place. It is trait-like, and endures overtime, and is associated with intrinsic motivation. According to Spafford, Pesce & Grosser (1998) and Ryan & Deci (2000) individual inspires actions that are associated with the feelings for exploration, and achievement. In this approach, individual interest is measured through self-report using questionnaire or structured interview.

In contrast, situational interest approach focussed on context-specific stimulus such as passages being culture based, appropriate, and the use of prior knowledge. Other stimulus of situational interest includes the use of visual, auditory or the combination of the two to engage learners. All these stimulations however, are momentary and situationally bound. This suggests that stimulations would be systematically withdrawn as the individual

interest of the pupils seems to be aroused as informed by pupils' level of engagement to their learning tasks (Haravkiewicz & Hulleman, 2010). Hidi (2001) reported that individual approach is a critical factor of academic motivation and learning, although it is time consuming and effortful task. In this study, DSTS is used as reading models, and as situational interest stimulants to stir the individual interest of the pupils to be engaged with their reading activities.

Hung, Hwang, & Huang (2012) report on project-based Digital Storytelling approach to improve learning motivation of a science course in an elementary school. The study has a total of 117 Grade 5 students in an elementary school in Southern Taiwan. The study employed quasi-experimental none-equivalent control design with (n=60) assigned to an experimental group, and (N = 75) to control group. The experimental group was asked to complete a Digital storytelling Project via taking pictures with Digital Cameras, developing to producing Digital Storytelling clips to be presented in the class. The control group were assigned to conventional project-based learning approach, for a period of sixteen weeks. From the experimental results, it was found that digital storytelling approach improved the learning motivation, attitude, problem-solving capability and learning achievements of the students. Gender wise, the study reported having no significant difference between gender. Finally, the project-based learning with digital storytelling could therefore effectively promote the science learning motivation, the problem-solving competence, and the science learning achievement of both genders. For this study, DSTS was used across subject specific curriculums.

Allen (2013) reports developing a survey instrument called Attitude Toward Reading Survey (ATRS) to measure 3rd to 5th grade pupils' attitudes toward reading across three

dimensions - print, internet, and e-reader texts. Allen (2013) reported that, the e-reader factor had the strongest reliability of the other factors having .813 alpha level, followed by internet with .780 and print media with .678 levels respectively. Gender wise, the study reported that boys prefer reading from an e-reader more than girls, however, the difference was not significant. The differences in the schools' demographics was also not significant as the difference, according to the study, did not lead one school to have significant differences in reliability (school 1 α=.821; school 2 α=.823). The results, by implication inform that, appropriate Digital Technology is more effective in influencing pupils' interest to read than print media. Also, Lourenço & Ramos (2015) reported that construction of the Digital Narrative allows the Pupils to give a remarkable level of motivation and commitment and allows the realization of Strategy for maintaining pupils' interest.

However, other studies assert that, text being meaningful, relevant, written at an appropriate level, and the purposes for reading are clearly communicated to the pupil are among factors that influence pupils' interests. Other factors include feeling associated with exploration, and achievement (Jozwik, 2015). Most of these studies also reveal that, significant difference exists between boys and girls, with girls scoring higher mean score (Khairudden, 2013; Coles & Hall; 2002; Gambell & Hunter, 2002).

In another development, O'Donnell (2015) reports a study that used BookFlix to engage five fourth grade struggling readers (three girls and two boys) between nine to ten years old. The purpose of the study was to investigate whether BookFlix could engage struggling and disengaged readers. The study was informed based on Gardener's multiple intelligences that each student learns differently. The study was conducted over a six

weeks' period. Data were gathered through parent and student surveys, observations, interviews and student response journals. The study concludes that, eBooks support comprehension and fluency of the participants, inspires intrinsic motivation due to the features of the eBooks in using text to speech, vocabulary definitions and text highlighting. The participants were also reported to be interested in BookFlix because they could access more interesting books to read at any time.

Garba & Olaofe (2012) compare the two instructional Strategies in Sokoto metropolis: digital pictures and duster-chalk and teacher talk in teaching reading fluency skills to primary three pupils. The purpose was to examine if contemporary pupils who were already exposed to digital technology at home could be engaged and motivated to learn in a traditional learning environment. The study reported that digital pictures motivate and improved academic performance of the experimental group.

In conclusion, the studies reviewed reveal that, digital-based reading material are more engaging on the aspect of pupils' motivation to learn and use of digital technology is gender friendly than print-based material, that favours girls better than boys. However, the review reveals two major research gaps which this study hopes to bridge. The research gaps are Geographical and subject specific research gaps on the Impacts of Digital Storytelling Strategies on Reading Interest, Fluency and Comprehension of Pupils with reading difficulties in Sokoto State of Nigeria.

### 2.6 Reading Fluency and Comprehension: Definition, and Characteristics

Despite the increased interest in reading fluency (Osborn et al, 2003; Applegate, Applegate, & Modla, 2009) were of the view that, there remains no single agreed-upon definition for fluency. However, the most common definition of fluency (National

Reading Panel, 2000; Rasinski, 2004; Applegate, Applegate & Modla, 2009; Jibir-Daura, 2014) takes into consideration the components of rapid and automatic word recognition. In other words, reading fluency is defined as an indicator of speed, accuracy and prosody of oral reading, adding that, fluency is a bridge to reading comprehension (Fuchs, Douglas & Michele, 2001; Rasinski, 2004; Kimura, 2012).

However, a new interest on reading fluency instruction emerged. This new trend in reading fluency measures reading fluency level with reading comprehension. This was based on the argument that "Comprehension is the basis for any reading instruction. The assumption is that, when decoding skills become natural and automatic, there would be gains in fluency and comprehension (McConnaughhay, 2008). This new trend in reading fluency, therefore, defined reading fluency as a set of foundational skills that allow readers to decode text rapidly with proper expressions necessary for comprehension (RTI 2011; Moats, 2005). The new trend in fluency instruction is trying to discourage the notion that fast reading is equal to fluency. Thus, Abadiano (2005) argues that learners could only read with expression if they comprehend what they read. This was supported by Rasinski (2004) who asserted that engaging pupils in exercises that emphasize speed over meaning confuse fast reading with fluent reading and that is a corruption of the concept of reading fluency. For this study, reading fluency is defined as reading-foundational skills that allow automatic decoding of a connected-text, at an appropriate rate, with proper expression necessary for comprehension.

The concept of comprehension refers to the process of constructing meaning from the information provided by the author. Reading comprehension therefore, is the essence of reading and the goal of any form of reading instruction (Beatrice, 2008; Vaughn &

Candace, 2009; Snowling, Cain & Oakhill, 2009). For learners to have effective comprehension skills, they must possess a variety of skills including automaticity in word decoding (McConnaughhay, 2008). Consequently, readers who are not yet fluent read slowly, word by word, choppy and plodding. Disfluent pupils often have difficulty in reading comprehension (Kruidenier, 2002; Pang, et al 2003; Sherman, 2004; Hornstein, 2004; Hudson et al, 2005; Rasinski, 2011; Garba, 2013; Jibir-Daura, 2014).

Reading comprehension has three major elements. These include the reader, the text and the purpose of reading. Snowling et al (2009) offers five general principles to assess reading comprehension. These include multiple-choice, true-false judgments, sentence completion, open question answer and oral response techniques. The nature of the assessment should be clear, and the assessment should measure both fluency and comprehension based on connected text. In this study, oral response technique was employed as response method to the reading comprehension questions.

In conclusion, this study corroborates with Rasinski (2004) that engaging pupils in fluency exercises that emphasises fluency rate over comprehension, is a corruption of the concept of reading fluency instruction. Hence, to avoid the corrupt practices of paying more emphasises on rate, over reading comprehension, the target population of this study were instructed in both reading fluency and reading comprehension.

### 2.7 Digital Storytelling on Reading Fluency and Reading Comprehension

Dearth of literature was experienced on Digital Storytelling for Reading Fluency and Comprehension, particularly of pupils with reading difficulties. However, a study was reported by Kimura (2012) who examined the effectiveness of digital storytelling in improving oral reading fluency of 35 Japanese nursing students. Kimura (2012) used

Nursing textbook via the preview function of photo story 3 for the study. The report concludes that the participants learn to read deeply, visualise the story, enjoy verbalising their interpretation of the context which was the lacking skills among Japanese students. The major gap between this study and Kimura (2012) includes the geographical area, age of the respondents, their educational level, the software used and the subject of the study. Kimura was interested on the oral reading fluency of his Japanese university students only. However, this study focussed on Interest, Reading Fluency and Comprehension of Primary Five Pupils with reading difficulties in Sokoto State of Nigeria.

Notwithstanding, this study shares some similarity with Kimura's (2012) as this study used passages from the pupils' English language text book to create content based Digital Storytelling clips which the pupils were exposed to. Having only one study in this area is a predicator that there is a dearth of literature about Digital Storytelling Strategy, specifically on Reading Fluency and Comprehension of Pupils with reading difficulties. Consequently, this study sought to bridge that gap.

Salkhord, Gorjian & Pazhakh (2013) explore the Impact of Digital Stories on Reading Comprehension among Iranian pupils through an Internet-Based Instruction. The purpose was to measure the Impact of Digital Stories on Reading Comprehension among Iranian young learners through an Internet-Based Instruction. The design of the study was based on experimental method through pre-and-post-test design. Some 60 participants (18 boys and 42 girl) were divided randomly into three groups – internet-based, paper-based, and conventional- based (as control). For the last two groups the hard copy of the same 10 digital stories were used for their treatment. Two research questions were asked: Does Internet-based instruction of digital stories improve Iranian young EFL learners' reading

comprehension? Is there any difference between students' reading comprehension proficiency in conventional, paper-based, and internet-based instructions? The findings of the study show that the internet-based instruction of digital stories had the most effect on young EFL learners' reading comprehension. Moreover, it was found out that using pre-and-post work activities can also help to improve learners' reading comprehension.

Garba (2014) explores the effect of pictures on gender in teaching reading fluency skills to primary three pupils in Sokoto metropolis. The concern of the study was to investigate if use of pictures in teaching reading fluency skills, could influence the achievement scores of the participants between genders. The study was inspired by the study conducted in the United State on the different function of brains between gender employing Functional Magnetic Resonance Imaging (fMRI). The images reveal that when males were engaged in listening task, only the left hemisphere "lights up" whereas both right and left hemispheres light up in females. The same images emerged when males and females were engaged in reading activities (Shaywitz et al., 1995).

The finding of the study informs that no significant difference exists between boys and girls in the experimental group. Based on that, the study concludes that, pictures are gender friendly in teaching reading fluency skills to primary three pupils, particularly in the study area. The gaps between Garba (2014) and this study among others are area of the study and the nomenclature of the target population. In this study, the target population are pupils with reading difficulties from rural and urban public primary schools. In addition to that, both reading fluency and comprehension of the pupils form the dependent variables of this study.

## 2.8 Types of Reading Fluency

Basically, there are two major types of reading fluency: oral reading fluency and silent reading fluency. In this view, Armbruster et al (2006) reported oral reading fluency where pupils read passages aloud several times and receive guidance and feedback from the teacher improves reading fluency and overall reading achievement. Armbruster et al (2006) claim that, no research evidence is available currently to confirm that instructional time spent on silent, independent reading with minimal guidance and feedback improves reading fluency and overall reading achievement.

Also, Therrien (2004) and Hasbrouck (2006) were of the view that Repeated Reading (RR), not Silent Reading is the best strategy for fluency development. They argue that RR favours both abled and disabled learner in developing their fluency and reading comprehension. This was based on its two elements: giving pupils the chance to read and re-read the same passage again and again; and having an opportunity to model reading through various sources. These include either their teacher, reading partner or assistive digital reader such as Mp3 device. Silent Reading fluency obviously lacks these essential elements in improving readers' fluency for comprehension.

However, Esteves & Whitten (2011) examine how Assisted Reading with Digital Audiobooks and Sustained Silent Reading (SSR) influenced reading fluency and reading attitude of his students. The study had 20 participants drawn from five different schools. The pupils in the treatment group were given MP3 players with downloaded Audiobooks and the accompanying text to follow along with while listening during the time normally devoted to SSR. Results of the study showed that, the pupils with reading disabilities demonstrated a greater increase in reading fluency rates through Assisted Reading with

Digital Audiobooks, compared to the control group that participated in SSR. However, reading attitude findings were not statistically significant.

As reported by Esteves & Whitten (2011), this study employed Reading Aloud Repeated Reading Strategy with the target population. The decision was based on its essential values of giving pupils chances to read and re-read the same passage many times and having an opportunity to receive correction. The Strategy also allows pupils to receive modelled reading through reading aloud with their teacher or reading partner, which Silent Reading fails to offer. More especially, this study provides the target population with audio-visual reading models via Digital Storytelling for their learning purposes. However, Yildirim & Ates (2012) were of the contrary view that Silent Reading Fluency, not Oral Reading Fluency is a predictor of reading comprehension.

### 2.9 Impact of Reading Fluency on Comprehension

Fuchs et al (2001) provide converging evidence supporting ORF's validity as an indicator of reading comprehension. They conclude that ORF corresponds better with tests of reading comprehension than do more direct measures of reading comprehension. Also, ORF measured by reading aloud functions as a better correlation of reading comprehension than by silent reading fluency. Also, LaBerge & Samuels (1974) theory of automaticity in reading explain the connection between decoding and comprehension (Rasinski, et al., 2005). According to this theory, readers who have not yet achieved automatic word processing, switched their attention to decoding and comprehension at the same time. This cognitive attention detracts from the more important task of comprehending the text. Poor reading fluency is thus directly linked to poor reading

comprehension (Abadiano, 2005). Pikulski & Chard (2003) and Rasinski (2004) are of the view that reading fluency is a crucial factor in reading comprehension.

Pikulski & Chard (2003) assert that to experience proficient reading comprehension, the reader must be able to identify words quickly and easily. If reader has not developed fluency the process of developing words drains attention and insufficient attention is left available for comprehension. Rasinski (2004) states that growing number of evidences points to reading fluency as a key factor in pupils' reading comprehension achievement. Rasinski (2010) and Rasinski & Lorraine (2005) averred that actors, singers, poets, orators, and others who perform regularly engage in repeated and guided reading activities for them to be fluent when performing on stage. Likewise, when pupils are asked to perform such texts they have a natural reason to engage in rehearsal - guided oral assisted and repeated readings – which eventually provides an organic motivation for comprehension. This suggests that for learners to obtain and use effective comprehension skills and Strategy; they must possess a variety of skills including reading fluency. In this view, this study exposed the target population to reading fluency and comprehension Strategy. These include repeated reading aloud with teacher and MP3 audio clip, mental Imagery for Reading comprehension, and partner Oral Repeated Reading. Summary of the major works reviewed in sections 2.4 to 2.9 is contained in Table 2.10.

**Table 2.10 Summary of the Major Works Reviewed in Sections 2.4 to 2.9**

| Author | Aspect Reviewed | Aspect Borrowed |
|---|---|---|
| Singh, (2011). | Effectiveness of 5-category pedagogical model for mobile learning using SMS. | Mobile Learning and their classifications |
| Piper, Jepkemei, Kwayumba, & Kibakho, (2015). | Kenyan ICT policy in practice: the effectiveness of tablets and e-readers in improving students' outcomes. | |
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## 2.10 Reading Fluency and Comprehension Developmental Theories

Reading fluency and comprehension involve processes and complex Strategy that need to be understood for instructional purposes. These complexities are only understood via the theories postulated to explain the processes involved in learning to read. Most of these theories predict stages or phases at which certain reading skills are developed. However, the potency of the prediction of these theories depend on two factors. The factors according to Ehri (2004), involves internal (the learners) and external (instructional) factors. Internal factors are both general and specific. General internal factors involved individual pupil's vision mechanism, target language and memory. But, the specific internal causes involve individual pupil's mastery of the target language's alphabetic principles. The external factors are based upon the quality of reading instruction the pupils received. In this view, learning to read at specified age, stage or phase, depends on two distinct influences. The first, is the quality of reading skills the pupils were exposed to; and learners' interest or engagement with their class activities constitutes another influence.

There exists a proliferation of various aspects of reading fluency and comprehension developmental theories. Four of these theories were reviewed in this section. These include Sight Word Recognition Theory by (Ehri, 1992, 1997; 2005). Others comprises of Stages of Reading Development by (Chall, 1983); Automatic Information Processing by (LaBerge & Samuels 1974)); and Repeated Reading Approach by (Samuels, 1979; 2005). However, in view of this study, Ehri's sight word recognition theory is more elaborate on how children learn to read words by sight. Ehri distinguishes for phases to reflect the type of alphabetic knowledge that predominates in the connections that are

formed during reading acquisition. The four phases are pre-alphabetic, partial alphabetic, full alphabetic, and consolidated alphabetic.

The first phase characterises sight word learning at the earliest period. Children, at this point of their learning to read, know little about the alphabetic system, they do not form letter–sound connections to read words. If they read words at all, they do it by remembering selected visual features. At this phase, children are basically non-readers, lacking full knowledge of the alphabetic system, especially vowels.

The partial alphabetic phase is attained when children learn the names or sounds of alphabet letters and use these to remember how to read words. At partial alphabetic phase, pupils are limited to forming partial connections because they are unable to segment the word's pronunciation into phonemes. Also, they lack full knowledge of the alphabetic system, especially vowels. Older pupils with a reading difficulty also qualify as partial alphabetic readers. Consequently, partial phase readers have much difficulty decoding unfamiliar words.

The third phase is full alphabetic phase. Children become full alphabetic phase readers when they can learn sight words by forming complete connections between letters in spellings and phonemes in pronunciations. At this phase, readers could decode unfamiliar words, they could also invent spellings that represent all the phonemes, and they could remember correct spellings of words better than partial phase readers. Pupils at this phase use four different Strategy to read unfamiliar words. The Strategy include decoding, analogising, prediction and memory. The first three Strategies help pupils to read

unfamiliar words, while the last strategy explains how pupils read words they already learned before (Ehri, 1992).

The final phase, called consolidated phase emerges as full phase readers retain increasingly more sight words in memory. As they become familiar with letter patterns that recur in different words, the grapheme–phoneme connections in these words become consolidated into larger units. Connection-forming processes are the heart of sight word learning, linking spellings of written words to their pronunciation and meaning in memory (Ehri, 1992; Perfetti, 1992; Rack, Holme, Snowling, & Wightman, 1994).

Chall's (1983) model consists of six stages of reading development. The earliest stage 0 is called pre-reading or preschool stage. This stage begins at birth and continues until children reach school age of six years. During this period, children pretend to read the story books previously read to them, and some could even write their names. These skills are however attained, if the children are being read to by an adult and are being provided by reading and writing materials. These continue up to stage one.

Stage one of Chall's model marks the beginning of children's reading and decoding. This stage begins at six to seven years. In Nigerian context, this correspond to pupils in primary class one to two. During this stage, according to Chall (1983) children should begin to associate the graphemes with letter sound to decode unfamiliar words. Children, according to Chall (1983) attained to this stage only through direct instruction in alphabetic principles and their practice, reading of simple story books with phonic elements, on or above what a child could read independently. At the end of this stage pupils should be able to read up to 600 words.

Stage two is referred to as confirmation and fluency stage. This stage begins when the child is approximately at seven to eight years. This correspond to pupils in primary two to three. At this stage, pupils are learning to read, and could read simple familiar texts with increase familiarity consolidated by the basic decoding skills attained to in stage one. Pupils acquired skills at this stage by direct instruction in advanced alphabetic principles, wide reading of familiar and interesting story books to promote fluent reading and being read above their independent reading level to develop vocabulary and new concepts. Listening is still more effective than reading, but at the end of this stage, pupils should have about 3000 sight words, and could understand 9000 words when read to. During stages one and two, pupils acquire necessary skills about texts and should be fluent in reading. Fluency could be fostered by providing beginning readers with abundant reading materials that are written at an appropriate level.

Stage three is called reading for learning. This begins at the age of nine to 13 years; this correspond to pupils in primary four up to Junior Secondary Two in Nigeria. During this period, pupils are reading to learn innovative ideas, to gain new knowledge, to experience new feelings, and learn new attitudes from one single viewpoint. These skills are attained to through intensive reading of literary and reference books that contained new vocabularies, innovative ideas, and new values. Also, reacting to text through discussion and responding to questions equally help pupils to learn from their reading. According to Chall (1983), at the end of stage three, listening comprehension of the same reading text is still more effective than reading comprehension. Reading and listening are about equal, only for those who read very well.

Stage four is termed “multiple view point”. This stage builds directly after attaining the skills stage three. Stage four begins at the age of 15 – 17 years which corresponds to students being in senior secondary one to three. At this stage, readers encounter a greater depth of coverage of topics through multiple perspectives. To successfully attain to this stage, students must widely read and study text books in Sciences, Social science, Arts and humanities. They also need to read high-quality literacy texts, newspapers and magazines. At this stage, reading comprehension is better than listening comprehension of difficult text materials. However, for poor readers, listening comprehension may be equal to reading comprehension.

Stage five is the final stage of Chall's (1983) model. This stage is called construction and reconstruction stage. This begins at 18 years and above, corresponding to students at undergraduate level, in Nigerian context. Reading at this level represents the most mature stage in reading development. In this stage, readers have reached a degree of expertise in a domain, such that reading becomes a process of judgment, analysis, and synthesis. Readers judge what is important, analyse how it fits with current knowledge, and then synthesise new knowledge based on an elevated level of abstraction. The domain specificity of the stage is important. Readers at stage five may regress to Stage four when they read complex materials on an unfamiliar topic. Within his or her domain, a reader decides what to read and at what level of detail to fulfil his purposes. To attain this advanced stage, students read wide and more difficult materials, and at this level reading is more efficient than listening.

LaBerge & Samuels (1974) postulated the concept of automaticity to explain why fluent readers decode and understand written text with ease, while beginning readers face difficulties. The theory conceptualises that, reading a text with understanding involves a two-steps processes of decoding and comprehension. In beginning reading, attention is switched alternatively from decoding to comprehension. In fluent reading however, decoding is done automatically, and attention remains on comprehension. In other words, both tasks are done at the same time. According to Samuels (2013), attention could be divided into internal and external categories. The external aspect of attention refers to learners' behaviour of directing his sensory organs in their attempt to internalise information. This aspect of learners' attention could directly be observed. However, the internal part of attention involves such readers' characteristics that could not be observed directly. These include alertness, selectivity and limited capacity of attention to process information. Attention therefore, is the main construct of LaBerge & Samuels (1974) automatic information processing theory.

Repeated Reading technique, a method for assisting beginning readers to achieve automaticity in reading fluency advanced by Samuels (1979). According to Samuels (2013) repeated reading technique was modified to include auditory support from which the learners could read silently along with as much as need. However, the auditory support would be withdrawn systematically as the children grasped the reading passage. Formerly, the strategy has five steps which could be modified to suit the need of the reading instructor and his pupils. The steps include selecting a reading passage that is not so hard or easy to pupils that all words could be read at high accuracy. The passage could be as short as 50 to 500 words depending on the reading skills of the leaners involved. Secondly, there should be a scoring sheet or progress monitoring chart for scoring the

learner. Thirdly, the pupil is asked to read aloud to the teacher, who counts the number of errors and the words correctly read by the pupils at specified time. Fourthly, the pupil is allowed the opportunity to practice rereading the passage independently without limit until the pupil could read the passage at certain degree of fluency. However, this study modified this and the following step by adding comprehension to it. The last step is to repeat the reading-cycle (steps one to four) until the pupil could read the passage with certain degree of fluency and comprehension.

Finally, this study adopts Samuels (1979) repeated reading technique as one of its theoretical framework. This was because the technique was modified to include auditory support from which the learners could read along with as much as need (Samuels, 2013). Thus, auditory support forms one of the aspects of digital storytelling.

### 2.11 Reading Instructional Strategy for Pupils with Reading Difficulties

Weng, Walker, & Rosenblatt (2015) state that inclusive instruction focused on providing equal opportunities for all, regardless of learners' disability is the best instructional strategy for pupils with reading difficulties. They define inclusive instructional strategy as adopting policies and educational practices to benefit the needs of all the learners.

Wright (2001) and Denton, Bryan, Wexler, & Vaugh, (2007) report that digital assisted reader; partner reading; mental imagery approach; progress monitoring; and oral reading are researched based reading fluency and comprehension Strategies for pupils with reading difficulties. They opine that, generally, pupils with reading problems learn effectively if taught with a lot of practice. They need one – on – one teacher and pupil assistance so that they could move forward at their pace. Hence, multimodal approached

proved to be effective strategy in the use of visual, auditory and kinaesthetic-tactile pathways simultaneously in a lesson (IDA, 2013; 2015).

Multimodal approaches are techniques used to engage multiple learning pathway simultaneously as pupils learn and practice language skills. The method implies that pupils learn best when information is presented in different modalities (Mercer & Mercer, 1993; Murphy, 1997; Birsh, 2006; Carreker, 2006; IDA, 2015). Using multisensory method for instruction may help pupils to learn best through differing modalities (Schwed & Melichar-Utter, 2008). Henry & Hook (2006) added that simultaneous multisensory practice of skills strengthens connections between pathways and support retrieval and working memory.

Murphy (1997) examined whether a multi-sensory approach (VAKT) to spelling instruction would have an impact on spelling achievement. At the end of the study Murphy found that there was only 11% difference in mean scores of post-tests between the two groups. The finding reveals that there is no significant difference between the groups. Although according to the study no significant differences was found between the two groups, that does not in any way mean, if replicated to distinct set of learners, and with different subject and location, the same result would accrue. Similarly, Jasmine & Connolly (2015); Kresnawati, Nitiash, & Ratminingsih, (2013) argue that using an active multisensory approach enhances the transfer into long term memory. This suggests that continuous use of multisensory activities such as exposure to digital multimedia may enhanced the reading fluency and comprehension of pupils with reading difficulties.

Finally, going by the review in this section, the following were borrowed and as treatment procedure of this study. These include repeated reading aloud; mental imagery for reading comprehension; partner reading; and weekly assessments. This was because, the strategies were reported to be effective in teaching reading fluency and comprehension to pupils with reading difficulties.

### 2.12 Factors Contributing to Reading Difficulty

DeCapua & Marshall (2011) reported that Many factors contribute to the education of pupils with reading difficulties. These include civil conflict, migration, or economic necessities requiring them to work or care for younger family members. Other factors include low literacy rates, limited access to required educational materials, cost of school uniforms, textbooks, and school fees. Also, inadequate preparation of teachers, pupils' lack of interest and familiarity with language of instruction, or prevalence of traditional pedagogical methods focusing primarily on rote learning and memorization contribute to pupils learning difficulties. Olaofe (2001) reported that what the teacher does wrongly in class contributes more to pupils' performance than any other related factors such as inadequate furniture and instructional materials.

Lesaux (2012) reported that linguistic diversity and poverty are two major factors that negatively affect pupils' reading outcome. Poverty places low-income pupils at significant risk of school failure. In other words, having to learn to read in a language which the pupils are yet fully proficient, increases the likelihood of reading failure for pupils from low-income family. Furthermore, low literacy rates, inadequate teachers, pupils' lack of interest and the prevalence of traditional pedagogical methods, are some of the factors contributing to poor reading performance of the pupils in the study area.

## 2.13 Characteristics of Pupils with reading difficulties

Raponi (2016) defines pupils with reading difficulties as pupils who were at risk of academic failure. According to Raponi (2016) these learners could easily be identified though their typical characteristics. These include having poor literacy skills in both L1 and target languages. They also demonstrate poor academic content knowledge of the languages. In most cases, they are isolated from mainstream pupils. Hence, there is need for appropriate approach and materials to help them bridge the academic gap between their peers.

Similarly, California Department of Education (CDE) (2009) and Joseph (2006) reported that lack of achievement is often the first indicator of possible learning difficulties. Pupils with serious learning difficulties in most cases fail to make significant improvement even when provided with appropriate intervention and will continue to demonstrate low achievement after intervention periods. Other manifestation of reading difficulty, particularly among primary aged pupils, include difficulty in written and spoken language in learning second language (Wennersten, 2013).

However, Jozwik (2015) identified six factors that generally make reading comprehension difficult for English language learners. These factors include background knowledge, word reading ability, vocabulary, word-calling, limited knowledge of text structure, and affective factors. When a pupil's background experiences do not correspond with the content of texts encountered in school, he is likely to face difficulties in extracting meaning from text. Similarly, if literacy skills are not already developed in the first language or if oral English proficiency is insufficient, reading becomes an abstract and meaningless process. Vocabulary correlates with strong comprehension. On

some measures of comprehension, pupils perform poorly because of limited vocabulary knowledge. Stanovich (1986) reported that, no empirical evidence exists to indicate that decoding a word could happen without extracting some level of meaning. Likewise, an EL's limited familiarity with discourse features and structures used in text could hinder his text comprehension (August et al., 2006). Lastly, lack of interest in reading is a likely predictor of poor comprehension (August et al., 2006).

### 2.14 Reading Assessments for Pupils with reading difficulties

Comprehensive screening assessments are essential in teaching reading skills to primary school pupils. Comprehensive reading assessments are the cornerstone of effective reading instructional strategy because, with effective assessment, teachers could predict which pupil would be at risk for later reading difficulty (Lesaux, 2012). Reading assessments for pupils with reading difficulties, include four different decision-making. These include screening, diagnostic, progress monitoring and assessment of pupils' achievement scores (Hasbrouck & Tindal (2006).

Screening is a brief assessment that focusses on critical reading skills that predict reading growth and development, or otherwise of the pupils. This usually could be conducted at the beginning of the intervention to identify children who may likely need alternative forms of instruction. Teachers were being required to administer screening measures to individual pupils to prevent future reading difficulty. Hasbrouck & Tindal (2006) opine that any result of screening measure is essential when making decisions about a pupil's placement or possible referral for academic assistance.

Diagnostic measures (IDA, 2012) refer to an assessment conducted at any time during the school year when a more in-depth analysis of a pupil's strengths and needs are necessary to guide instructional decisions. The procedures for using the ORF norms to diagnose fluency problems is to assess a pupil's fluency during the first 60 seconds of reading connected text that is at the Pupil's instructional reading level (Hasbrouck & Tindal, 2006).

Progress-monitoring is record of pupils' progress used to identify those who are not demonstrating adequate progress and may require additional or different forms of instruction. It also evaluates and provides direction for developing instructional programmes for pupils at the risk of academic failure. Progress-monitoring assessments could be administered depending on the purpose of the assessment. According to CDE (2009) there are two types of PMC: Mastery and General Outcome Progress Monitoring.

Mastery Progress Monitoring (MPM) refers to assessments designed to assess how well a pupil has mastered a particular portion of the curriculum. The assessment also helps teachers to determine which skills a pupil or group of pupils are lacking. With this decision-making assessment type, a teacher or school administrators could use the information from these assessments to differentiate instruction to meet the needs of the pupils. The General Outcome Progress Monitoring (GOPM) refers to an assessment that comprises all the skills pupils were expected to have learned by the end of the year. A definite benchmark is set in this type of assessment to determine if pupils were on target to meeting the grade-level standards or not. In other words, General Outcome Progress Monitoring Assessment is a terminal decision-making tool, to determine if pupils achieved grade-level benchmark or show signs of any learning improvement.

Talada (2007) and Lorence (2015) use two commercially published instruments for their studies. Talada (2007) uses DIBELS and the TerraNova Basic Multiple Assessment Test. DIBELS assessment is given individually to pupils to identify pupils in need of more academic support, and it is also used to monitor pupil progress toward instructional goals. This tool is individually administered and scored by the assessor. The TerraNova Basic Multiple Assessment Test is designed to determine pupils' proficiency regarding the comprehension of text given to them within a whole-group setting. TerraNova Basic Multiple Assessments are commercially scored by an external agency. Lorence (2015) uses AIMSweb Progress Monitoring and AIMSweb Reading-Curriculum Based Measurement (R-CBM) assessment tools to measure the reading fluency baseline of his Arabic speaking, English language middle school pupils. The AIMSweb Progress Monitoring is a multiple-choice assessment that measures reading comprehension administered in whole class. This tool is like WHOCREST used in this study. The second instrument which is like IRFACT used in this study, measures pupil decoding skills and tracks individual pupil's correct-read words-per-minute. However, in this study, the assessments were conducted and scored in the classroom offline, while Lorence (2015) assessments were conducted online. In both studies, pupils were given one minute to read a passage aloud and respond orally to a reading comprehension questions. A word is considered correctly read when it is read within three seconds, with proper pronunciation, and read in the correct order. The teacher recorded as an error if a pupil distorts or substituted a word, skipped a word, or fail to read the word within three seconds. Also, transposing the order of words is penalised as error. On reading comprehension, pupils were individually asked to respond orally to a questionnaire regarding their experience.

In summary, the preceding review informs four diverse categories of reading assessments and their implications in dealing with pupils struggling with reading. In this study, researcher's prepared assessment tests as suggested by N'Namdi (2005) was used. Screening tests labelled WHOCREST TESTS A and B presented in Appendices A1 and A2 were used to screen pupils with reading difficulties. During the treatment, Progress Monitoring Chart in Appendix E was used as a tool, to monitor pupils progress. Lastly, IRFACT (Individual Reading Fluency and Comprehension Test) in Appendix B was used before and after the treatment. Summary of the major works reviewed in sections 2.10 to 2.14 is presented in Table 2.11.

**Table 2.11 Summary of the Major Works Reviewed in Sections 2.10 to 2.14**

| Author | Aspect Reviewed | Aspect Borrowed |
|---|---|---|
| Hasbrouck & Tindal (2006) | Oral reading fluency norms: a valuable assessment tool for reading teachers. | Reading assessment for ESLL |
| CDE (2009) | Determining specific learning disability and eligibility using response to instruction and intervention. | |
| Samuels (1979; 2005) | Repeated Reading | Learning theories for theoretical framework |
| Samuels (1974) | Automatic information Processing theory | |
| Teenam (2013) | Digital Storytelling on pupils' motivation | Sample size |
| Suleiman (2011) | Digital Storytelling on language skills | |
| Tuba et al (2013) | Digital Storytelling for multilingual adolescents | |
| Tatum (2009) | Effect Digital Storytelling Strategy on Information text comprehension | |
| Abdul-Ameer (2014) | Improving learning through Digital Stories | |
| Chung et al (2013) | Enhancing reading and writing skills using digital storytelling strategy | |

## 2.15 Review of Selected Previous Studies

This section reviews previous studies that focused on Digital Storytelling on Reading Fluency and Comprehension. The section was put into two sections. Section one reviews previous literature specifically in respect to Digital Storytelling. The second section was on Reading Fluency and Comprehension employing other methods of instruction other than DSTS.

### 2.15.1 Review of Previous Studies on Digital Storytelling

Dearth of literature was experienced on Digital Storytelling Strategy for Interest, Reading Fluency and Comprehension of Pupils with reading difficulties. This experience has validated the assertion of Williams, Jamali & Nicholas (2006) who lament that existing literature indicate lack of attention to the application of Digital Technology generally, for pupils with special needs. Nonetheless, the section reviewed available literature on application of Digital Technology as instructional tools to the closely related area of the subject matter.

Folkesson & Lena (2007) carried out an experimental study to explore if there would be differences in reading ability between pupils from computer supported environment characterised by self-regulated learning and gender differences. The result of the study reports that no significant differences on word decoding were found in any of the three corresponding tests. The analyses showed that the experimental group had significantly better reading comprehension both on group level and for girls and boys separately, as well as lack of gender differences in reading ability.

Abdul – Ameer (2014) explores the effect of Digital Storytelling Strategy on vocabulary learning among 40 third grade pupils in a private primary school in Iraq. The study uses three internet based Digital Stories as a treatment for three weeks; 40 minutes per lesson twice a week. The control group receives their lesson in the classroom without any technological aid for the whole sessions. At the end of the treatment, the participants were assessed using two-part vocabulary test. The result reveals that the experimental group score higher with 75%, 65% against 40%, 30% of the control group. The study concludes that the use of Digital Storytelling Strategy promotes vocabulary learning development. In this study, the participants were exposed to Digital Stories, the studies, however differ in the areas of number of samples, treatment period and the characteristics of the of the participants. This study targets pupils with reading difficulties and were exposed to Content-Based Digital Storytelling to stirring their interest in reading and enhancing their reading fluency and comprehension.

Chung, Kuo, Chiang, Su & Chang (2013) also explore the effect of Digital Storytelling Strategy on Vocabulary development, reading and writing performance of six grades pupils. The study has 27 participants aged between 11 – 12 years old in an intact class in central Taiwan. The study lasted for only a day, employing mixed design pre-test and post-test, non-control experimental research design. The outcome of the study reveals that Digital Storytelling Strategy instruction has a positive effect on the participants' vocabulary learning as well as their reading comprehension. The Strategy was also noticed to provide a strong-support for the reading to writing connection. It was concluded that Digital Storytelling has a positive effect on Taiwanese EFL sixth grade vocabulary, reading comprehension and writing skills.

Tecnam (2013) explores the effects of Digital Storytelling Strategy on Korean English language learners' attitude and perception towards learning in English. The study has 32 fifth grade public primary school pupils in South Korea. Tecnam uses pre-test and post-test non-control survey design. Initial reading attitude test questionnaire was administered to the participants before and after the study. The result of the study reveals that Digital Storytelling Strategy positively impacted the reading skills of the participants. Areas of differences between this study and Tecnam's study include the geographical area, research design, number of participants and subject area. This study had 94 subjects, employing pre-test and post-test non-control but experimental design to explore the impact of Digital Storytelling on Pupils with reading difficulties in the study area.

Suleiman (2011) explores the Impact of Digital Storytelling Strategy in Sharping the Native Language Skill of forty Primary one Malay language pupils. The study uses three Digital Story topics. A diagnostic test was given at the beginning of the study to assess the participants' level of language proficiency. Pupils created Digital Stories in their native language were used to gauge their progress in language skills – spoken, reading and listening. The study concludes that, pupils made Digital Storytelling Strategy has significantly improved the participants' language skills. The only similarity this study shares with Suleiman's study is the use of digital storytelling to primary pupils, and the use of diagnostic test. However, the two studies differ in sample size, level and the area of investigation. Also, in this study, the pupils were treated with content-based digital storytelling clips.

Tuba, Jayoung & Youngjoo (2013) design a Digital Storytelling Strategy to 12 middle school Pupils in South-Eastern United States. All the participants were children of

immigrants' families. The study lasted for four weeks, with seven sessions - two sessions of 90 minutes twice a week. The study concludes that DST develops students' leadership skills as they work as a team, set goals, manage time and resources, and construct a positive identity. It also offers a powerful means for multilingual adolescents to reflect on and recreate their multilingual and multicultural lives and identities.

Hitchcock, Prater & Dowrick (2004) explore the Effects of Tutoring and Video Self-Modelling as an interventional approach on the reading comprehension and fluency of four first grade pupils identified with reading difficulty. The study was empirical employing multiple baseline design to observe the effect of the two interventions on reading fluency and comprehension skills. It was revealed at the end of the study that reading fluency of the three participants doubled and quadrupled with the fourth participants. Reading comprehension increased in number of correct responses recorded. The study points to the need for further research on the effectiveness of Video Self-Modelling and Tutoring in promoting reading fluency and comprehension of young learners. One of the obvious strengths of the study was it is interventional approach to cater for the four pupils identified with reading difficulty so that they could, after the study compete favourably with the other members of the class.

Tatum (2009) in her Doctoral study investigated the effects of participation in directed reading activity with Digital Storytelling on the Information Comprehension among 80 sixth grade pupils in a private secondary school in the USA. The study lasted for eight weeks employing mixed – experimental and control design. Both groups received pre-test at the beginning of the study and were at the initial stage exposed to DRA reading based on two reading passages. The experimental group was separately exposed to

instructional activities needed for the creation of Digital Storytelling. The results of the study reveal that there was no significant difference on the information comprehension because of participation in digital storytelling activity. However, the result reveals show that the participants of the Digital Storytelling show evidence of meaningful interaction. Areas of differences with Tatum (2009) and this study include geographical areas of the studies, types of schools, respondents, number of participants, research methodology and duration of the treatment.

Finally, the review revealed that, most of the authors employ digital storytelling to develop other aspects of language other, with only one on reading fluency of Japanese undergraduate students. These are various examples of authors according to their geographical locations and their subject areas. These authors are Folkeson & Lena (2006), on ICT and self-regulated learning, USA. Abdul-Ameer (2014), on DST and Vocabulary development of 3rd grade pupils, in Iraq; and Chung et al (2013), DST on Vocabulary, in Taiwan. Others are Tecnam (2013) DST on L2 learning attitude, in South Korea. Suleiman (2011), on DST on L1 skills, in Malaysia. There are also Kimura (2012) on Reading Fluency, in Japan; Soleiman (2013) on vocabulary, in Iran; and Tuba et al (2013) on DST and student engagement, USA. This study has therefore filled both geographical and subject specific gaps, by exploring the impact of digital storytelling strategy on interest, reading fluency and comprehension of pupils with reading difficulties in Sokoto State (Nigeria).

### 2.15.2 Review of Previous Studies on Reading Fluency and Comprehension

Northern Education Initiative (RTI, 2011) conducted an Early Grade Reading Assessment (EGRA) in English in 26 Local Government Education Authorities (LGEAs) in Bauchi

and Sokoto States. The study has a sample of 1,776 children (924 in Bauchi, 852 in Sokoto) in 149 schools. The study reveals that approximately one-third of pupils in Bauchi and in Sokoto could not read a single word of connected text. The percentage of girls who could not read any text was higher than the proportion of boys (24.3% of boys versus 37.9% of girls in Bauchi, and 28.4% of boys and 40.5% of girls in Sokoto. Pupils' poor ORF scores, in turn lead to low levels of text comprehension. Sixty-one percent (61%) of pupils in Bauchi (66.7% of boys and 76.6% of girls) and 71.3% of pupils in Sokoto (53.8% of boys and 57.9% of girls) could not answer a single question correctly. The study concludes that, by the end of P4, most pupils have not acquired a sufficient level of foundational skills necessary to read fluently. Moreover, across all sub-tests in both states, differences exist between girls' and boys' reading ability. Northern Education Initiative (RTI, 2011) is part of the inspiration for this study.

Soleiman & Akbari (2013) explore the effect of storytelling on children's vocabulary in English. The study revealed that storytelling is a suitable method to support the English vocabulary development of young preschool children. The obvious short coming of the study although experimental in nature, was its five hours' duration. However, the use of flash card in storytelling instructional technique is worth buying. Besides, through the space of time, stories have been adapted to each successive medium that has emerged, from the campfire to the television screen, to personal computer screen. This study pushed the trend to the screens of mobile devices.

Le (2014) explores the effect of phrase reading on English as foreign language oral reading fluency and comprehension with Forty-four 2$^{nd}$ year pupils put in to two equal groups – 22 each as experimental and control group. The study lasted for 15 weeks, with

two lessons of 100 minute per week on grammatical phrases given to experimental group, while the control group receives no treatment. The result shows that there was significant difference between the groups in the post-test with experimental having the mean of 7.65, 8.47, and 6.83. The control group scores the mean of 6.11, 7.89 and 6.02 on oral reading fluency, silent reading fluency and reading comprehension tests respectively. Also, the correlation between oral reading fluency and reading comprehension was positive with the r = .684 for reading fluency and r = .000 for reading comprehension. The study concludes that approximately 47% of the variance in reading comprehension could be attributed to oral reading fluency. Worthy of borrowing from this study is its treatment procedure in reading for fluency assessment.

Talada (2007) opines that a reciprocal relationship exists between reading fluency and comprehension that allows one to comprehend more thoroughly as one reads more fluently. To confirm this assertion, he undertook a doctoral study on the relationship between reading fluency and comprehension with sixty-eight second and third grade Pupils at a private Catholic Elementary School in Elmira, New York. Fluency scores were generated for each pupil using the Oral Reading Fluency testing component of Dynamic Indicators of Basic Early Literacy Skills (DIBELS). The pupils' comprehension abilities were assessed using the TerraNova assessment generated by McGraw-Hill Publishing Company. These scores were then statistically compared to determine the strength of the correlation. Results of the findings indicated that a strong statistical relationship exist between pupils' scores in many subgroups. The oral reading fluency and comprehension scores for the pupils in grades two indicated a strong positive correlation. The oral reading fluency and comprehension scores for the pupils in grade three indicated a very strong positive correlation. Pupils in third grade that were proficient in oral reading fluency

exhibited a very strong positive correlation when their oral reading fluency and comprehension scores were compared. Correspondingly, pupils in third grade that were not proficient in oral reading fluency exhibited a very strong positive correlation when their oral reading fluency and comprehension scores were compared.

Walczyk & Griffith-Rose (2007) were of the view that, timed fluency measure could be negatively related with reading comprehension. It restricts poor word decoders to employ compensation techniques (slow reading, pausing, reading aloud, and repeated reading, jumping over difficult words or looking at the word back again) to overcome reading difficulty. The study reported a large-scale test of Compensatory-Encoding Theory (C-ET) with 211 pupils from third, fifth and seventh grades. The pupils were administered four reading tasks individually- unrestricted reading; restricted/unrestricted time pressure reading; constant/variable rate reading; and reading silently/ aloud. For each task, practice passages and two challenging test passages were used, each about 300 words. The findings of a major test of C-ET indicated that there is more than one way to comprehend well. Less fluent readers must understand how and why to compensate, be motivated, and unrestricted. Furthermore, older, more fluent readers could benefit by reading under slight restriction or by other engaging tasks or texts. Routine reading tasks allow their minds to wander. Considering differences between these two groups, instructional implications were discussed based on the distinct needs of each to maximize comprehension. Only that no detailed procedure to replicate the study when and where necessary, but the study was very helpful by shedding light on the attitudes of fluent and non-fluent readers across grade levels and suggests how to cater for their fluency instruction.

McConnaughhay (2008) investigates the relationship between reading fluency and comprehension in a qualitative and quantitative approach with fifty third grade pupils in one suburban elementary public school. Qualitatively, the finding suggests that a meaningful relationship exists with $r = .783$ at $p \leq 0.05$. Quantitatively, both fluency and comprehension scores where categorised into three categories: low-risk, some risk, and at risk, and advanced, proficient, and basic comprehension levels respectively. The relationship shows that the high class of low-risk in the fluency test scores associate with advanced comprehension level, some risk with proficient level and at risk with basic comprehension level. This reveals that reading fluency has impact in reading comprehension achievement scores. The study suggests for further investigation employing pre-test and post-test control experimental approach with at least six weeks' fluency instruction to further determine if reading fluency has any impact in comprehension. This study employed the research design of the study with 94 primaries five pupils with reading difficulties, five sessions per week for 10 weeks.

Egmon, Bauza & Moses (2009) explore the effects of reader's theatre on the fluency and comprehension of English language learners among 39 pupils in one suburban public school. The study employs experimental and control research design where both groups were treated with reader's theatre instruction. The experimental group received seven weeks' instruction in English while the control group received six weeks' instruction in Spanish. The result indicates that that the experimental group made gains in all categories while the control group made fewer gains and even experience loss in phasing, intonation and pace. The study concludes that reader's theatre positively Impact both reading fluency and reading comprehension, thus leads to the gains by experimental group.

Applegate, Applegate & Modla (2009) have a contrary view in respect to outright acceptance that fluency contributes to reading comprehension. The study measured comprehension skills of 171 pupils from grade 2 to 10 who were identified by their teachers to be fluent readers based on their high achievement scores in fluency rate, and prosody. The result reveals that one third of the subject struggled with the comprehension test at their current grade level. This confirms their assertion that relationship between reading fluency and comprehension lies in a complex interaction that is not yet clearly understood and need more investigation and research. The result also suggests that grade level reading material is not a factor in the relationship between reading fluency and comprehension. The study supports the notion that assessment of fluency without concurrent assessment of thoughtful comprehension is misleading and damaging. The study is of the view that any reading fluency instruction divorced from comprehension test is detrimental to learners; for they would be wrongly identified as fluent readers based on their fluency achievement only divorced of any comprehension evidence.

The strength of the study is the involvement of a stream of 9 different grade levels in the study and the tacit warning the study sounded against fluency instruction divorced from comprehension evidences. Little knowledge about the type of reading instruction the pupils were exposed to and the inability of the study to measure if female pupils are likely to be strong readers than their counterparts are the two-short coming recorded by the study.

Beydogan (2012) is of the view that the higher fluent reading level a pupil is, the higher success he achieves in analysing the texts at the paragraph level and in giving correct answers to the relevant comprehension questions. To confirm this assertion, a study was

carried out with 131 primary school sixth grade pupils. The reading fluency level of the pupils was determined by a fluent reading scale followed by tests on reading-comprehension strategy. The study concludes that fluent reading levels influence effective usage of Strategy applied by pupils in understanding texts at the paragraph level. Like this study, fluency and reading comprehension tests are intended to be employed. The aim is to explore how digital storytelling could enhance the reading fluency and comprehension of pupils with reading difficulties.

Bastug & Akyol (2012) examine whether there is a relationship between reading comprehension and fluent reading skills of primary school pupils. This study uses survey design with a sample population of 72 pupils from second-fifth grades. Data were collected through the Prosodic Reading Scale using video recording and comprehension tests. Correlational and multiple regression analyses were used to analyse the data. Results indicated that reading fluency, reading rate, and prosody are found to be significantly interrelated. According to the results of multiple regression analysis, fluent reading skills were found to significantly predict reading comprehension. What is worth borrowing from this study is the use of video camera in recording the reading fluency of the pupils. However, this study only measures the reading rates and accuracy aspect of the pupils reading.

Basaran (2013) examines the relationship between fourth grade primary school pupils' reading fluency and their comprehension. Some 90 fourth-grade pupils who were attending a state primary school participated in the study. The findings of the study demonstrated that fluent reading was an indicator of comprehending; prosody predicted in-depth meaning linking better than the other fluent reading skills; correct reading skills

predicted superficial meaning linking better. The findings also revealed that there was a weak correlation between reading speed and comprehension. In this study, prosody was not considered considering the nature of the target population.

Drapper & Spaul (2013) examine the reading crisis in South Africa, focussing on the oral reading fluency and comprehension of grade 5 (ESL) learners. The study was prompted based on the realisation that clear majority of South African Pupils could not read for comprehension by the end of Grade four – even in their home language. The findings of the study show that only 41% of the pupils read at less than 40 WCPM with an average of 17 WCPM. Therefore, only 9% of the sampled population scored between 90-100 WCPM in the study; and only 6% achieved comprehension scores above 60%. Based on the outcome of the study, a benchmark of 90-100 WCPM was prosed in South Africa subject to a new study in the area. The study also outlines policy for remedying the reading crisis in the country.

**2.16 Theoretical Framework**

This study fashioned out a theoretical framework called DSTS Multimedia Repeated Reading Theory by way of eclecticism from Mayer's (1999) Cognitive Multimedia Learning Theory and Samuels (1979; 2005 Repeated reading Technique. Cognitive Multimedia Learning Theory (CTML) was developed by Mayer & Moreno (1999). Multimedia theory (Sordent, 2016) was an integration of three different theories that include Baddeley's model of working memory (1986); Paivio's dual coding theory (1986); Sweller's Theory of cognitive load (1988; 1994). The theory was of the view that pupils learn more deeply from multimedia instructional practices that appeal to multiple

communication paths, than from words or texts alone (Sordent, 2016; Marchetti & Cullen, 2016). This view was supported by many other scholars in the field of multimedia instructional strategists (Mercer & Mercer, 1993; Murphy, 1997; Birsh, 2006; Carreker, 2006; Schwed & Melichar-Utter, 2008; Henry & Hook, 2006) and Mayer (2005a; 2005b).

Repeated Reading Strategy was first developed by Samuels (1979; 2013) based on an observation that whenever pupils were asked to read orally in class. Many were unable to do so with fluency and were often embarrassed by their plodding reading. Samuels then, concludes that, the pupils were not building reading fluency because they hardly had the opportunity to practice reading any text more than once. This, he argued, was contrary to the way most people who reach prominent levels of performance in their chosen fields gain their abilities. Later, the technique was modified to include auditory support from which the learners could read along repeatedly with an accompanying text as much as need be. However, the auditory support according to Samuels (2013) would be withdrawn systematically as the reading fluency of the learners considerably, developed. Figure 2.3 represents the theoretical framework for present study.

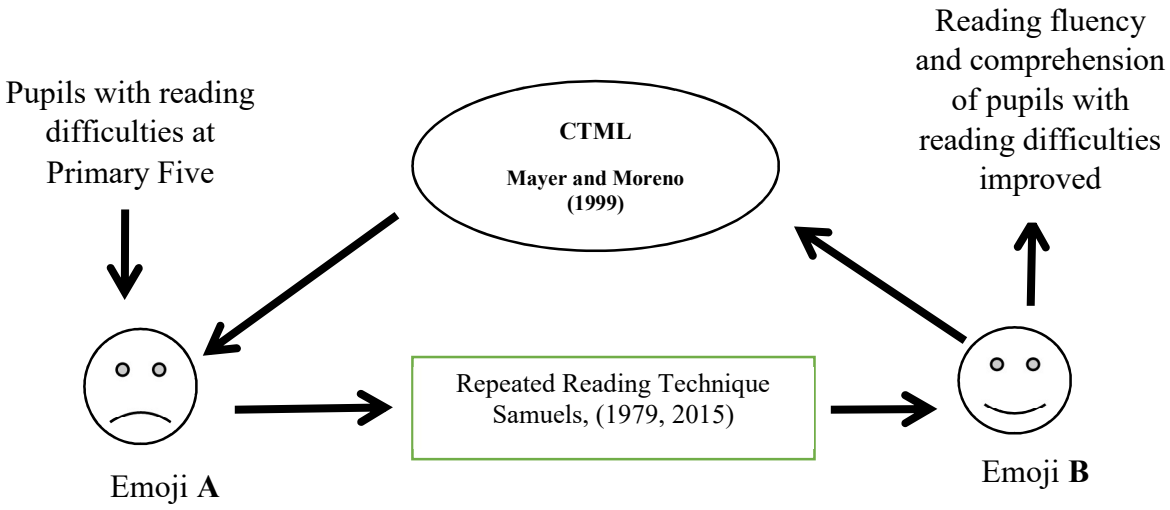



**Figure 2.3 DSTS Multimedia Repeated Reading Theoretical Framework**

Figure 2.3 presents the theoretical framework of the study. The study uses Emojis as digital symbols (Adams, 2017; Wicker, 2017); Semiotic objects (Danesi, 2016) and facial expression (Wang, Zhao, Qui, & Zhu, 2014) of several pupils with reading difficulties exposed to digital storytelling strategy. Emoji A with a frowning face denotes pupils with reading difficulties before they were exposed to digital storytelling strategy, while Emoji B wearing a smiling face, denotes the same pupils after being exposed to digital storytelling strategy. Thus, if pupils with reading difficulties were instructed with DSTS as multimedia instructional approach, via repeated reading technique, the pupils would learn better than being exposed to traditional approach of teacher-talk-board-and chalk.

# CHAPTER THREE

# RESEARCH METHODOLOGY

This chapter presents the research procedure for the study. The study explores the Impacts of Digital Storytelling Strategies on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State, Nigeria. The procedures include the research design; the population of the study; sample size and sampling techniques; instrumentation; validation; and reliability of the instrument. Others are data collection procedure; treatment procedure; and data analytical procedure.

## 3.1 Research Design

The study employed Mixed Matching Only Static Group Pre-test – Post-test Design. The design is an aspect of Quasi-experimental design and is qualitative and quantitative in nature. The design is chosen for the study because it allows the use of existing classroom structure, where random sampling could not be possible. In this research design, the pre-test and post-test scores of the participants are compared to determine the gains of the study (Fraenkel & Wallen, 2000; Sambo, 2005; McQueen & Knussen, 2006).

Whole Class Reading Comprehension Screening Tests was administered to the for matching the pupils into group. For the sake of this study, those pupils scoring unsatisfactory comprehension score of between 0-39 were considered as pupils with reading difficulties, thereby, being suitable candidates for the study. However, the design was modified to include weekly formative assessments in addition to the treatment. The weekly formative assessments were included as a feedback technique to inform the progress or otherwise of the participants. Figure 3.1 illustrates the research design.

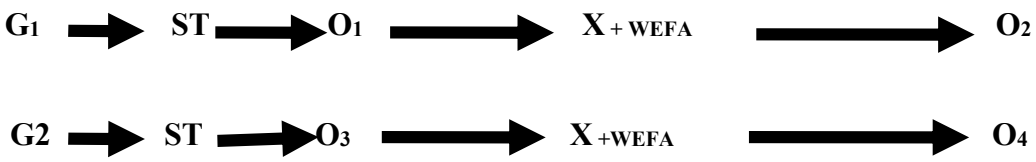



**Figure 3.1: Illustration of the Research Design**

The following are the interpretations of the notations in the illustration of the research design:

G1: Experimental Group One (Rural)

G2: Experimental Group One (Urban)

ST: Screening Tests

O1- O3 Pre-Test

O2- O4 Post-Test

X+WEFA: Treatment with Weekly Formative Assessments

## 3.2 Population

All primary five pupils reading with difficulties in the public primary schools in Sokoto State constitute the target population for this study. According to Departments of Research Planning and Statistics, and Department of Quality Assurance of the Sokoto State Universal Basic Education Board, the State has a total population of 25, 056 class five primary school pupils. Some 14,660 of the pupils are males, while the remaining 10,056 are female pupils (SUBEB, 2015). However, the population of pupils with reading difficulties is unknown. Consequently, sampling by proportion technique was employed to estimate the population of the target population from the schools sampled out for pilot study. The outcome of the pilot study conducted reveals that, over 90% of the total

number of primary five pupils in the study area constitute pupils with reading difficulties. Therefore, the study estimates the population of pupils with reading difficulties at 23,000.

### 3.3 Sample Size and Sampling Techniques

Owing to the research design of the study, this study has three different sample sizes. The initial sample sizes were according to two nominal rolls from rural and urban schools. According to these records, rural school has 50 pupils; while the urban school has 100 pupils; these amount to 150 pupils altogether. However, only some 122 pupils - some 47 and 75 pupils from rural and urban schools respectively attend the whole class screening exercise. Consequently, the sample size of 122 pupils participated in the study throughout the duration of the programme. However, after the post-test the population of the urban school was downsized to 47 to have equal number of participants from the two schools. For the downsizing, systematic elimination technique was employed, by deleting the next pupil after counting three from the list of the pupils' attendance. This becomes necessary to avoid errors and bias in running the statistical analyses of the pupils scores.

Therefore, notwithstanding the size of the target population, this study has a sample size of 94 pupils. This includes some 47 pupils each from the two selected schools. The decision to have this sample size was informed base on the recommendation that a sample size of previous study could be adopted (Amugune, 2015). Instances from the sample of previous studies include Teenam (2013), with 32 participants; Suleiman (2011) with 40 participants; and Tuba, et al (2013) with 12 participants. Others comprise Tatum (2009) with 80 participants; Abdul-Ameer (2014) with 40 participants; and Chung, et al (2013) with 27 participants. Besides, Fraenkel & Wallen (2000) recommend that a minimum group of 30 participants is ideal for experimental research.

Screening tests was employed using the scores of the Whole Class Reading Comprehension Screening tests to sample the pupils, but, purposive sampling technique was employed to sample the school. This was based on the understanding that the schools were homogenously using the same curriculum content; and employing the same conventional approach. Similarly, the teachers were employed by the same board; and having the same minimum teaching qualification. The schools were also not undergoing any International educational intervention programme of any sort.

## 3.4 Instrumentation

This study has two major, and two subsidiary instruments for data collection. The two major instruments include Individual Reading Fluency and Comprehension Test (IRFACT) Individual Pupil's Reading Interest Tool (I_Print). The two subsidiary ones are Whole Class Reading Comprehension Screening Test (WHOCREST), and Progress Monitoring Chart (PMC). The instruments are described in detail in the following sections.

### 3.4.1 Individual Reading Fluency and Comprehension Test (IRFACTS)

IRFACTS was the adaptation of the Nigerian Early Grades Reading Assessment (EGRA) developed by Northern Nigeria Education Initiative (NEI) in Bauchi in 2006. The instrument was derived from Dolce Test of word recognition and adapted to reflect appropriate vocabulary in Northern Nigeria by Northern Education Initiative (RTI, 2011). The selected passage for the instrument was modified to rime with the pupils' grade level and their socio-cultural background.

The instrument has two sub-tests: oral reading fluency and reading comprehension tests. Considering the education level of the target population, only rate and accuracy of the pupils reading were assessed (Vaughn & Candace, 2009: 294). Reading rate is measured by the number of words read correctly per minute in specified grade level passage; and accuracy of word reading is determined by dividing the number of words read correctly by the number of errors committed (Klaude & Guthrie, 2008; Goods et al, 2002; Kruidenier, 2002; Pang, et al 2003; Sherman, 2004; Hornstein, 2004; Hudson et al, 2005; Vaughn & Candace, 2009; RTI, 2011).

There are three levels of reading accuracy in assessing oral reading fluency. These are: independent, instructional and frustration levels:

a. **Independent level:** This is a level at which pupils read a given passage fluently at 98% accuracy without any assistance. The comprehension rate at this level is expected to be 80 to 100 per cent, which in this study is considered as excellent. Teachers are recommended to stop collecting data on reading fluency when a pupil is reading at independent level across texts (Abadiano, 2005).
b. **Instructional level:** This is a level at which a pupil read at 90%-95% accuracy level, with comprehension rate ranging between 40 to 70% which in this study is considered as satisfactory. Fluency instruction, in this study is recommended on grade level passages (Abadiano, 2005; Hasbrouck & Tindal, 2006).
c. **Frustration level:** This is a level at which the pupil read at <90% accuracy level or less, with a comprehension rate ranging between 0 to 30%, which in this study is considered as unsatisfactory. Fluency instruction is recommended with two years below the grade level of pupils in this situation (Abadiano, 2005; Hasbrouck & Tindal, 2006).

Similarly, the Reading Comprehension Test, which forms the second part of the instrument measures individual pupil's ability to answer ten questions from the passage read. The questions for the Reading Comprehension were both direct and simple. The Running Passage provides possible answers to guide the scoring decision. The comprehension test was marked over 100. Pupils were expected to answer the comprehension questions after reading the passage once. Oral-response was the mode of answers to the comprehension questions. Pupils were only asked questions based on the number of words they read. If a pupil did not read any of the text, he would not be asked any comprehension question. Although the questions were not timed, excessive time taken to answer the question was considered as predicator of poor comprehension (Fry 1977; Quinn et al, 2007). A score of 0-39 was considered unsatisfactory comprehension score; 40-79 as satisfactory, and 80 to 100 score as excellent comprehension score. The scoring procedures for the instrument were explained in the following section.

### 3.4.1a Scoring Procedure for Oral Reading Fluency Test

Garba (2013) procedure for scoring fluency was adapted for this study. First, two copies of the passage are needed, one as pupils' copy and the second copy served as score sheet for the teacher to score the pupil's fluency rate per minute. A stop watch is needed for timing the pupil. The teacher needs to instruct the pupil when to start and when to stop reading. The pupil read the passage aloud for 60 seconds with the teacher following as the pupil reads. The teacher slashes (/) through the words that were read incorrectly. The teacher notes the last word the pupil read when the 1 minute is up. The formula to calculate the fluency rate is to subtract the number of words slashed through from the total number of the words in the passage. If for example, a pupil read a passage with total number of 50 words per minute, out of which he read 6 words wrongly, the pupil's

WCPM then is 44. The following are few guides on how to score the pupil reading fluency sub test:

a. Score each pupil on the pupils' score sheet immediately after administering.
b. If the pupil does not read any word correctly for 15 seconds, say "Thank you!" and discontinue the exercise. The teacher should indicate this scenario by checking the box at the bottom of the instrument. This informs that the pupil was stopped.
c. If a pupil hesitates or struggles with a word for 3 seconds tell him the word and score it as incorrect. For example: "I have a… (3 seconds) instead of "I have a ~~goldfish~~" ¾.
d. Hyphenated words count as two if both words could stand alone as individual words. For example: yo-yo is scored as one word, but push-ups as two words.
e. Numbers must be read correctly in the context of the sentence. For example: 36 is read as 'thirty-six' not 'three six'.
f. If a word is mispronounced in the context, it is scored as incorrect. For example: "I ate a fish" but was read as "I ~~eat~~ a fish" ¾
g. A word is scored as correct if it is initially mispronounced, but the Pupil is self-corrected within 3 seconds. Mark SC above the word and score it as correct. For example: "I ate too much" but the Pupil says, "I SC/~~eat~~ too much" ¾.
h. Pupil is not penalized for imperfect pronunciation due to dialect or mother tongue interference. For example: when a pupil consistently says /t/ for /θ/ as in "thank you".
i. Inserted words are ignored and are not counted as errors. For example: "It is time for a rest." but the pupil says, "It is time for a long rest" score as 6/6.

j. Omitted words are scored as incorrect. For example: “It is time for a rest.” but the pupil says, “It is time for rest” mark “It is time for ~~a~~ rest”. And score 5/6.

k. Words read correctly but in a wrong word order are scored incorrect. For example: “The ice cream man comes” but says, “The ~~cream~~ ice man comes” score 3/5.

l. Abbreviations should be read in the way you normally pronounce the abbreviation in conversation: For example: TV is either tee vee or television.

### 3.4.1b Scoring Procedure for Oral Reading Comprehension Test

This measures individual pupil’s ability to answer questions based on the story of the reading passage. The questions for the reading comprehension are both direct and simple. The running passage listed the questions asked and provided examples of acceptable answers to guide the scoring decision. The comprehension test was marked over 100. 10 marks per correct response. Pupils are expected to answer the comprehension questions after reading the passage once without looking back. Although the questions are not timed, excessive time taken to answer the question is a predicator of poor comprehension (Fry, 1977, Quinn et al, 2007). A score of 70 percent and above is considered excellent, 40 to 69 percent is considered as satisfactory and 0 to 39 percent as unsatisfactory.

### 3.4.2 Individual Pupil’s Reading Interest Tool (I_Print)

Many techniques according to Hidi (2000; 2001); Guthrie, (2010); Renninger, (2000); and Robinson & Weintraub (1973) evolved on how to measure pupils’ reading interest. Few among those techniques include: forced choice - where pupils are asked to choose among few or many alternatives, personal interviews, written logs, diaries and reading inventories. Others include records of library books chosen, asking for children’s favourites among selections. In this study pupils were asked to express their interest

through interview, by a different instructor other than classroom teacher. The instructor individually interviews the pupils to choose from the statements of the instrument tagged I_Print. This tool is presented in Appendix D.

I_Print is an adaptation of Motivation for Reading Questionnaire (MRQ) developed by Allan and Guthrie at the University of Maryland (Guthrie, 2010). The tool (I_Print) was developed to measure individual interest of the participants via the situational arousals of Digital Storytelling Strategy. The tool contains fifteen items aimed to rate the extent to which each participant was stimulated to have interest in reading. The tool was scaled based on four scales (1 to 4) from "very different from me" to "a lot like me". The instrument is scored 60 as highest score, and 15 points as the lowest score. Thus, pupils that scored 15-30 scores are considered to have lower reading interest level, 31-45 as having medium or intermediate interest level and those with 46-60 scores as having higher reading interest level. The objective is to intrinsically arouse the interest of the pupils via Digital Storytelling Strategy rather than any external pressure or rewards. The instrument was administered before and after the treatment. The pretest was taken within the first week of the treatment; while the posttest was taken within last week of the treatment.

### 3.4.3 Whole Class Reading Screening Test (WHOCREST Test A and B)

Screening is a brief assessment that focusses on critical reading skills that predict reading growth and development, or otherwise of the pupils. This usually is conducted at the beginning of either the school year or before research intervention to identify children who may likely need alternative forms of instruction (Hasbrouck & Tindal, 2006). For this study, the screening test was used to screen out able and disable readers based on their reading comprehension ability. The test is a multiple-choice assessment that

measures pupils' reading comprehension ability. The test has ten comprehension questions. Each correctly answered question is scored ten. The test (Appendices A1 and A2) has two parts – A and B. Part A is Hausa language reading passage, while the B part is English language reading passage. Pupils scoring below 50 marks are considered as pupils with reading difficulties, thereby, considered as suitable participants of this study. The pupils scoring above 50 marks are considered in this study as able readers, hence should be screened out of the sample of the study. Hasbrouck & Tindal (2006) recommends that, if pupils scoring 10 or more below $50^{th}$ percentile using the average score of two unpractised reading passages the whole class need a fluency building programme. This was interpreted as when more than half of the class assessed scored below 50 marks (Munro & Page, 1993).

### 3.4.4 Progress Monitoring Chart (PMC)

In this study, Progress Monitoring Chart (PMC, Appendix E) is employed as weekly formative assessment as a feedback informing the instructors of the progress the participants are making on weekly bases. Technically, progress-monitoring measures are assessment conducted to estimate rates of reading improvement, identify pupils who are not demonstrating adequate progress and may require additional or different forms of instruction. PMC is also effective in evaluating the effectiveness of different forms of instruction for struggling readers (Hasbrouck & Tindal, 2006; Denton, et al 2007; Vaughn & Candace, 2009; Fakeye, 2012).

### 3.5 Validity and Reliability of the Instruments

The instruments were given to some lecturers in the Language Arts Section of the Departments of Arts and Social Science Education, Faculty of Education, Ahmadu Bello University, Zaria. The purpose was for the instrument to scrutinise and validate the tools based on the construct objective of the tools. The lecturers made some observation and offer areas for amendments. All the observations and amendments were carefully considered and effected before going to the field. As part validation of the instrument, a pilot study was conducted, and the two major instruments were scaled based on the sample of pilot scores.

### 3.6 Pilot Study

Pilot study was conducted purposely as part of the validation of the instruments, and to estimate the number of the target population. The study was conducted in two local governments of the study area: Tureta and Yabo LGAs representing rural and urban areas respectively.

In Tureta local government the pilot study was conducted at Abdulbaki Model Primary School Tureta, while in Yabo the study was carried out at Sarkin Kebbi Shehu Model Primary School. The pupils were first administered with the Whole Class Screening test WHOCREST part A in Hausa language, and the B part was administered immediately after. Each correctly answered question was scored 10 marks. Table 3.1 shows the summary of the pupils' performance in the A part of the exercise according to schools.

**Table 3.1 Pupils Assessment in WHOCREST Hausa Language Test**

| Scores | Tureta | Yabo | Total |
|---|---|---|---|
| 0-10 | 48 (73.8%) | 26 (41.9%) | **74 (58.2%)** |
| 20-40 | 16 (24.6%) | 33 (53.2%) | **49 (38.6%)** |
| 50+ | 1 (1,5%) | 3 (4.8%) | **4 (3.2%)** |
| **Total** | **65** | **62** | **127** |

Table 3.1 reveals 65 pupils took the test in Tureta LGA; while Yabo LGA has 62 pupils. Based on the scores, 48 pupils (73.8%) had between 0-10 marks from Tureta and 26 (41.9%) Yabo respectively. Some 16 pupils (24.6%) and 33 (53.2%) scores between 20-40 marks from Tureta and Yabo respectively. Only one pupil (1.5%) and three pupils (4.8%) scored 50+ marks from Tureta and Yabo respectively. This shows a total of 74 pupils from the two LGAs with 58.2% scoring between 0-10. Some 49 pupils representing (38.6%) scored between 20-40, and some four pupils (3.2%) out of 127 pupils scored 50+ marks. The table reveals that, 123 pupils representing 96.9% of the pupils from the two schools, were reading with difficulties, scoring below 50 marks in a reading comprehension test, in Hausa language. Table 3.2 gives a summary of the pupils' scores in English language part of the exercise.

**Table 3.2 Pupils Assessment in WHOCREST English Language Test**

| Scores | Tureta | Yabo | Total |
|---|---|---|---|
| 0-10 | 35 (53.8%) | 34 (54.8%) | **69 (54.3%)** |
| 20-40 | 26 (40%) | 25 (40.3%) | **51 (40.2%)** |
| 50+ | 4 (6.2%) | 3 (4.8%) | **7 (5.5%)** |
| **Total** | **65** | **62** | **127** |

Table 3.2 shows that 35 pupils (53.8%) and 34 (54.8%) scored between 0-10 marks from the two primary schools; 26 (40%) and 25 (40.3%) scored between 20-40 marks; and 4 (6.2%) and 3 (4.8%) scored 50+ respectively. In total, 69 pupils representing 54.3% from

the two schools scored between 0-10, and 51(40.2%) scored between 20-40 marks and only, 7 (5.5%) scored above 50 marks from the two schools in English language comprehension test. This reveals that 120 pupils representing 94.5% scored below 50 marks in the English language comprehension test. The results of the screening test as revealed in tables 3.1 and 3.2 inform that over 50% of primary five pupils in both rural and urban schools were reading with difficulties.

Ten pupils each from the two schools were selected. They were administered with Individual Pupil's Reading Interest (I_print) and Individual Reading Fluency and Comprehension tests (IRFACT). Table 3.3 represent the oral reading fluency of the two schools respectively.

**Table 3.3 Pupils' ORF Accuracy by School Location**

| School's location | Frustration | Instructional | Stopped | Total |
|---|---|---|---|---|
| Tureta | 4 (20%) | 2 (10%) | 4 (20%) | **10 (50%)** |
| Yabo | 8 (40%) | 1 (5%) | 1 (5%) | **10 (50%)** |
| **Total** | **12 (60%)** | **3 (15%)** | **5 (25%)** | **20 (100%)** |

Table 3.3 reveals that 12 (60%) pupils from the Tureta and Yabo Local Government areas were reading at frustration level. Some three pupils (30%) were reading at instructional level, while some five pupils (25%) were stopped from the exercise. Table 3.4 presents the comprehension performance of the pupils from Tureta and Yabo respectively.

**Table 3.4 Pupils' Comprehension Scores by School Location**

| Location | 0-39 | 40-79 | 80+ | Missing | Stopped | Total |
|---|---|---|---|---|---|---|
| Tureta | 10 (50%) | 0 | - | - | - | **10 (50%)** |
| Yabo | 9 (45%) | 1(5%) | - | - | - | **10 50%)** |
| **Total** | **19 (95%)** | **1(5%)** | **-** | **-** | **-** | **20 (100%)** |

Table 3.4 shows that 19 (95%) pupils from Tureta and Yabo Local Government Areas scored between 0-39 marks in the exercise, with one pupil from Yabo scoring between 40-79 marks. The table, therefore reveals that, all the pupils who participated in this exercise are poor comprehends, scoring unsatisfactory comprehension score below 40 marks. The scores from the Individual Reading fluency and Comprehension tests (IRFACT) at both the Rural (Tureta) and Urban (Yabo) schools are adequate indicators that over 90% of the pupils in the study area are reading with difficulties. The scores of the pupils reading interest between the two schools are presented in Table 3.5.

**Table 3.5 Pupils' Interest Scores by School Locations**

| **School** | **Pupils' I_Print Scores** | | | | | **Total** |
|---|---|---|---|---|---|---|
| | **15** | **16** | **19** | **20** | **21** | |
| Tureta | 10 | - | - | - | - | 10 |
| Yabo | 2 | 2 | 2 | 2 | 2 | 10 |
| **Total** | **12** | **2** | **2** | **2** | **2** | **20** |

According to Table 3.5 reveals that, 10 pupils (100%) from Tureta scored 15 marks each. 2 (20%) from Yabo LGA scored 15 marks each. Two other pupils (20%) scored 16 and 19 marks, each respectively, and yet another 2 (20%) scored 20, and 3(30%) scored 21 each. This reveals that, all the interest scores of the participants drop within the range of low interest scores of between 15-30 scores.

### 3.7 Reliability of the Instruments

The two major instruments used in this study were tried in a pilot study. The study was conducted in two schools from two local governments representing rural and urban schools in Sokoto State. The two instruments are Individual Reading Fluency and

Comprehension tests (IRFACT) and Individual Pupils Reading Interest Tool (I_Print). A reliability analysis was conducted on the perceived value scales of the two instruments comprising four and 15 items respectively. The IRFACT has two parts: reading fluency and reading comprehension part. The Alpha coefficient for the four items of the of ORF part of the instrument and that of the reading comprehension part of the IRFACT are 0.88 and 0.85 respectively. According to UCLA (2017) and Griffin (2015), the alpha levels of the instrument are reliable as a score over .70 is considered for high internal consistency. Similarly, the coefficient for the 15 items of the I_Print is .89. The alpha level of the instrument therefore, shows that the instrument has high internal consistency score above .70.

### 3.8 Data Collection Procedure

This section covers the duration and the procedures involved in conducting the research. The study was carried out in thirteen weeks under four separate phases as follows:

a. **First Phase**: **One-week Teachers Training Workshop:** This was to orient the teachers on concepts of Digital Storytelling Strategy and its application in teaching reading fluency and comprehension. The teachers also learned how to use the assessment tools for data collection. The time span of the training was 40 minutes per period, two periods a day, ten lessons per week.

b. **Second Phase: Pre-Field Assessments**: one-week was used to screen the participants for the study. WHOCRESTS was administered to screen the participants for the study. In this exercise, pupils scoring 0-39 were considered suitable for the study, while those scoring 50% above were screened out. Appendix H contains the result of the screening tests. The exercise was informed to determine the reading comprehension level of the pupils, and to screen suitable

candidates for the study. This is based on the recommendation that when 50% of pupils from a class score below 50 marks from two separate reading tests, is an indication that the whole class need fluency and comprehension building programme. In this respect suitable reading materials for such intervention should be two years below the pupils' grade level (Hasbrouck & Tindal, (2006); and Abadiano (2005).

c. **Third Phase**: **Ten Weeks:** This was treatment phase where the participants were exposed to 10 Teacher-generated Digital Storytelling for reading fluency and comprehension. For the conversion of the selected text passages to multimedia contents, **U. G. Third Person Approach for Content Based Digital Storytelling (2018)** presented in Table 2.8 was used. The treatment lasted for ten weeks (a passage per week) one period of 40 minutes per lesson, five lessons per week. Appendix G2 contains the details of the treatment.

d. **Last Phase- Post-Test:** One week was used for data collation. Post-test was administered to the participants using both I_PRINT and IRFACT respectively to measure the interest and reading fluency and comprehension of the participants after the treatment.

### 3.9 Treatment and Treatment Procedure

In this study, a total of ten passages were selected from two different text books. Passage one was selected from ***The Roberts English Series, Book Three;*** and Passages two-to-ten from ***Learn English, Book three.*** Appendices O1 to O10 contain the scanned images of the selected passages. The readability score of the passages is presented in Table 3.9. Each of the reading passages were modified where necessary and converted into three different text formats – a running passage for reading fluency activities, Mp3 Audio, Mp4

formats with subtitles. Micro Soft Flesh-Kincaid Readability Formula was employed to determine the readability of the selected passages due its ease of doing business and easy accessibility.

The Flesch Reading Ease Scale ranges from 0-100. Drapper & Spaul (2013) interpreted the Reading Ease Score of 90-100 as suitable for 10years pupils; 80-89 for 11 years; 70-79 for 12 years; 60-69 for 13-14 years; 50-59 for 15-17 years and 30-49 for 18-21 years. However, 60-70 Reading Ease Score was the standard range suggested by Microsoft (Stockmeyer, 2009). The Flesch readability formula also calculates the number of passive constructions used, because passives are slightly more difficult to read than actives. In this case, the higher the number of passive constructions, the higher the difficulty of the text. However, Pikulski (2002) warns that readability scores continue to be among the most discussed, misunderstood, and misused concepts in reading. Despite this argument, the study found it very important to state the readability of the passages used which may guide a lot of decisions. Table 3.9 provides the readability scores of the selected passages used for the treatment.

**Table 3.6 Readability Scores of the Selected Passages Used**

| Passage | Words | Sentence | Words /Sentence | Passive % | Reading Ease% | Age | Grade Level |
|---|---|---|---|---|---|---|---|
| Passage 1 | 116 | 10 | 11.6 | 0.0 | 88.5 | 11ys | 3.7 |
| Passage 2 | 136 | 14 | 9.9 | 14.2 | 78 | 12ys | 4.8 |
| Passage 3 | 163 | 13 | 12.5 | 0.0 | 62.2 | 13+ | 7.9 |
| Passage 4 | 113 | 9 | 12.5 | 0.0 | 81.0 | 11ys | 5.0 |
| Passage 5 | 143 | 10 | 14.3 | 0.0 | 71.0 | 12ys | 6.9 |
| Passage 6 | 253 | 25 | 10.1 | 0.0 | 80.1 | 11ys | 4.5 |
| Passage 7 | 175 | 10 | 17.5 | 20.0 | 67.1 | 13+ | 8.1 |
| Passage 8 | 134 | 13 | 10.3 | 30.7 | 73.2 | 15+ | 5.6 |
| Passage 9 | 115 | 10 | 11.5 | 10.0 | 77.4 | 15+ | 5.3 |
| Passage 10 | 120 | 10 | 12.0 | 0.0 | 84.6 | 11ys | 4.4 |

**Source: Researcher, (2018)**

As could be seen in Table 3.9, none of the selected passages falls short of Microsoft recommended Reading Ease Score of between 60-70%. Each of the weekly running passages was made available to individual participants accompanied with the multimedia formats to watch, read, and listen to, using mobile devices (portable DVD) as the treatment lasted. Treatment procedure of the study in Appendix G2. The procedure which was later developed into Content-Based DSTS Curriculum for Reading Fluency and Comprehension is presented in Appendix N. U. G Third Person Approach for Digital Storytelling Strategy (2018) in Table 2.8 was used as a procedure for content-based Digital Storytelling. Each of the passages was treated in 40 minutes per lesson, five lessons per week, in the following procedural steps:

a. **Day One: Pairing and Baseline Assessment of Pupils' Interest, ORF and RC Rates:** the first activity of the day was to pair the pupils as reading partners. Then, immediately after, the ORF & RC rates of every participant was taken using I_Print and individual pupil's Progress Monitoring Chart (PMC) respectively. This served as the weekly formative assessment of the participants. The objectives were to form reading partners; establish individual pupil's ORF& RC entry rates; influence pupils' interest in reading fluency with comprehension; and to encourage out of school activities.

b. **Day Two: Oral Reading Aloud with Teacher Using MP3 Audio Clip and M. I. for Reading Comprehension:** This is oral reading fluency and comprehension modelling day. The teacher modelled the reading of the passage, before asking the pupils to listen to their audio clips. After that, the pupils attempted the comprehension questions. The objectives were to build pupil's ORF rate with comprehension, encourage pair tutoring, encourage pupils to record their PMC and to encourage out of school activities.

c. **Day Three: Partner Reading & Mental Imagery for Reading Comprehension**: The teacher on this day is to train the pupils on partner reading activities as a leaning game. As they are reading, the teacher scores the reading fluency and comprehension scores on their PMC. The objectives are to build pupils' interest in reading fluency and comprehension, encourage pair tutoring, and take learning beyond class environment.

d. **Day Four: Repeated Oral Reading and Mental Imagery for Reading Comprehension:** Teacher introduces the strategies and the passage of the week to the class. He then reads the passage out aloud for pupils to follow along; allow the pupils to listen and view their Mp4 clip of the passage. Finally, the teacher asks and solves pupils' areas of difficulties. The objectives were to build pupils' interest in reading fluency and comprehension, encourage pair tutoring, take learning beyond class environment, and build the reading comprehension skills of the pupils.

e. **Day Five: Revision and Post-test of the weekly Formative Assessments:** Every Friday was assigned for revision of the week's activity. Also, after the revision, individual pupil's ORF and RC scores is taken. Friday's assessments are considered as the post-test of the passage of the week. The objectives were to monitor the progress of individual pupil's ORF and RC based on the passage of the week, and to build pupils' interest in reading fluency and comprehension. They were also to encourage pair tutoring, take learning beyond class environment, and to build the reading comprehension skills of the pupils.

### 3.10 Data Analysis Procedures

Five research questions were asked based on the objectives of the study, and, five null hypotheses were formulated. Descriptive statistic of mean and standard deviation was used to answer the research questions, while each of the hypotheses was tested employing appropriate statistical test at $\alpha \leq 0.05$significant level. SPSS statistical package was used for the statistical analysis. Summary of major works reviewed in chapter three is presented in Table 3.10.

**Table 3.7 Summary of Major Works Reviewed in Chapter Three**

| Author | Aspect reviewed | Aspect Borrowed |
|---|---|---|
| McQueen & Knussen (2006) | Introduction to research methods and statistics in psychology. | Research Design |
| Fraenkel & Wallen, (2000). | How to design and evaluate research in education (4th edition). | |
| Hasbrouck & Tindal (2006) | Oral reading fluency norms: a valuable assessment tool for reading teachers. | Reading fluency and Comprehension Assessment tools and Procedure for early grade reading programme |
| RTI (2011) | Results of the early grade reading assessment in English: Bauchi and Sokoto States. | |
| Abadiano (2005). | Reading: the road to developing efficient and effective readers | |
| Fry (1977) | Reading faster: A drill book. | Progress Monitoring chart |
| Denton, Bryan, Wexler, Reed & Vaughn, (2007). | Effective instruction for middle school students with reading difficulty. | |
| Vaughn & Candace (2009) | Strategy for teaching pupils with learning and behaviour problems. | |
| O'Donnell (2015) | Using technology and multimodal literacy to actively engage struggling and disengaged reader. A thesis submitted to the department of education. | Use of Multimedia |

# CHAPTER FOUR

# DATA PRESENTATION, ANALYSIS, AND DISCUSSION

This section presents the data gathered after the treatment on the Impacts of Digital Storytelling Strategies on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State. The data are presented in tabular form. Descriptive statistics in forms of frequency, percentage, mean and standard deviation were employed to answer the research questions; t-test related samples and independent t-test were used to test the Null-hypothesis at $\alpha \leq 0.05$ significant level respectively.

## 4.1 Data Presentation

This section presents pre-and-post-tests performance of Pupils with Reading Difficulties exposed to Digital Storytelling strategies. The data in this section are presented descriptively in forms of frequency and percentage of the pupils scores and level.

### 4.1.1 Pupils' Pre-and-Post-Test Interest Scores

The following Tables 4.1 and 4.2 present the pupils' interest scores before and after being exposed to digital storytelling strategy. In this exercise, score of 15-30 is considered as low interest score, 31-45 is considered medium interest score and score between 46-60 is considered as high interest score. Table 4.1 presents the scores of the participants at pre-test level..

**Table 4.1 Pupils' Pre-Test Interest Scores**

| Scores | Frequency | Percentage |
|---|---|---|
| 15 | 54 | 57.4 |
| 16 | 11 | 11.7 |
| 17 | 10 | 10.6 |
| 18 | 1 | 1.1 |
| 19 | 9 | 9.6 |
| 20 | 1 | 1.1 |
| 21 | 8 | 8.5 |
| **Total** | **94** | **100.0** |

Table 4.1 reveals that before the treatment all the participants scored within the low interest score of between 15-30. However, pupils interest in reading increased after the treatment as revealed in Table 4.2.

**Table 4.2 Pupils' Post-Test Interest Scores**

| Scores | Frequency | Percentage |
|---|---|---|
| 35 | 2 | 2.1 |
| 40 | 1 | 1.1 |
| 43 | 1 | 1.1 |
| 44 | 2 | 2.1 |
| 45 | 4 | 4.3 |
| 46 | 1 | 1.1 |
| 47 | 5 | 5.3 |
| 48 | 4 | 4.3 |
| 49 | 7 | 7.4 |
| 50 | 2 | 2.1 |
| 51 | 8 | 8.5 |
| 52 | 4 | 4.3 |
| 53 | 9 | 9.6 |
| 54 | 7 | 7.4 |
| 55 | 17 | 18.1 |
| 56 | 2 | 2.1 |
| 57 | 3 | 3.2 |
| 58 | 1 | 1.1 |
| 59 | 2 | 2.1 |
| 60 | 12 | 12.8 |
| **Total** | **94** | **100.0** |

Table 4.2 shows that after the treatment some 12 pupils scored the high interest point of 60. This shows significant improvement compared to pupils scores in Table 4.1 before the treatment. In order to have a clear picture of the two assessments, Tables 4.1 and 4.2 were compressed and summarised in Table 4.3 according to low, middle and high levels of interest.

**Table 4.3 Pupils' Pre-and-Post-Tests Interest Levels**

| | **Pre-Test Interest Level** | | | | **Post-Test Interest Level** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Low** | **Middle** | **High** | **Total** | **Low** | **Middle** | **High** | **Total** |
| Frequency | 94 | - | - | 94 | - | 8 | 86 | 94 |
| **Total** | **94** | **-** | **-** | **94** | **-** | **8** | **86** | **94** |

Table 4.3 reveals that before the treatment pupils' Interest level fall within the range of low Interest level of 15-30 points. After the treatment, considerable positive changes were noted. For example, 86 pupils scored high interest level of 46-60 scores; with eight participants at medium interest level of 31-45 scores. This reveals that the exposure of the pupils to digital storytelling strategies has significantly improved the interest levels of the participants. In order to clarify this assertion responses of the pupils in respect to their reading interest before and after the treatment are presented in Tables 4.4 to 4.5 respectively. Table 4.4 below presents pupils' responses in their reading interest level before the treatment.

**Table 4.4 Pupils Responses in Reading Interest at Pre-Test Level**

| No | Statements | Gender | Options | | | |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 1 | I am a good reader | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 2 | I enjoy reading aloud to my brothers at home | Boys | 47 | 1 | | - |
| | | Girls | 44 | 1 | 1 | |
| 3 | I enjoy reading passages that are relevant to my culture | Boys | 31 | 7 | 5 | 5 |
| | | Girls | 27 | 11 | 5 | 3 |
| 4 | I enjoy passages that are appropriate to my level | Boys | 32 | 5 | 5 | 6 |
| | | Girls | 35 | 5 | 4 | 2 |
| 5 | I enjoy developing my reading fluency and comprehension skills more with mobile-digital devices than with chalk and board | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 6 | I have a reading partner for reading fluency and comprehension development | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 7 | I like scoring my partner's reading fluency and comprehension with progress monitoring chart | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 8 | It is always delighting to know my fluency and comprehension scores | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 9 | It is delighting forming mental images when reading for comprehension | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 10 | I feel delighted when my teacher asks to know my areas of reading difficulty | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 11 | I like reading comprehension questions that make me think | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 12 | I feel happy when I finish my reading assignment on schedule | Boys | 47 | - | - | 1 |
| | | Girls | 46 | - | - | - |
| 13 | I feel engaged doing out of class repeated reading activities with my friends | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 14 | I enjoy Pair-reading-tutoring for reading fluency and comprehension development | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |
| 15 | Digital-text of digital storytelling encourages me to take learning beyond school environment | Boys | 48 | - | - | - |
| | | Girls | 46 | - | - | - |

**KEY: 1. Very different from me.**

**2. Little different from me.**

**3. Little like me.**

**4. A lot like me.**

Table 4.4 shows that, all the participants responded to option one that says, “very different from me” with the exception of statements in numbers two, three, four and 12. In item two, stating “I enjoy reading aloud to my brothers at home” only one boy and girl responded with option two “little different from me” respectively and one pupil responding to option three “little like me”. None of the participants responded positively to items five up to fifteen. More interesting was, the pupils responded negatively to items three, four, and eight. These items respectively state that “I enjoy reading passages that are relevant to my culture”, “I enjoy passages that are appropriate to my level”, and It is delighting to know my fluency and comprehension scores”. These items were identified as text-based arousals, now known as situational factors, that influence pupils Interest to read (Jozwik, 2015; Hidi, 2000; 2001). These responses, therefore, indicate that the reading of the pupils before the treatment was low level. However, after the treatment considerable number of positive changes were recorded as revealed in Table 4.5 below.

**Table 4.5 Pupils Responses in Reading Interest at Post-Test Level**

| No | Statements | Gender | Options | | | |
|---|---|---|---|---|---|---|
| | | | **1** | **2** | **3** | **4** |
| 1 | I am a good reader | Boys | 1 | 2 | 31 | 14 |
| | | Girls | 1 | 2 | 39 | 4 |
| 2 | I enjoy reading aloud to my brothers at home | Boys | 0 | 2 | 17 | 29 |
| | | Girls | 1 | 1 | 24 | 20 |
| 3 | I enjoy reading passages that are relevant to my culture | Boys | - | 1 | 11 | 36 |
| | | Girls | - | 1 | 18 | 27 |
| 4 | I enjoy passages that are appropriate to my level | Boys | - | 1 | 10 | 37 |
| | | Girls | - | 1 | 13 | 32 |
| 5 | I enjoy developing my reading fluency and comprehension skills more with mobile-digital devices than with chalk and board | Boys | 1 | - | 7 | 40 |
| | | Girls | - | 1 | 14 | 31 |
| 6 | I have a reading partner for reading fluency and comprehension development | Boys | - | 1 | 10 | 37 |
| | | Girls | - | 1 | 12 | 33 |
| 7 | I like scoring my partner's reading fluency and comprehension with progress monitoring chart | Boys | 4 | 4 | 23 | 17 |
| | | Girls | 6 | 2 | 28 | 10 |
| 8 | It is always delighting to know my fluency and comprehension scores | Boys | 3 | 2 | 28 | 15 |
| | | Girls | - | 5 | 32 | 9 |
| 9 | It is delighting forming mental images when reading for comprehension | Boys | 1 | - | 26 | 21 |
| | | Girls | - | - | 28 | 18 |
| 10 | I feel delighted when my teacher asks to know my areas of reading difficulty | Boys | - | 1 | 29 | 18 |
| | | Girls | - | 3 | 30 | 13 |
| 11 | I like reading comprehension questions that make me think | Boys | 2 | 3 | 22 | 21 |
| | | Girls | - | 1 | 28 | 17 |
| 12 | I feel happy when I finish my reading assignment on schedule | Boys | 1 | 1 | 20 | 26 |
| | | Girls | - | - | 21 | 25 |
| 13 | I feel engaged doing out of class repeated reading activities with my friends | Boys | 2 | 2 | 10 | 34 |
| | | Girls | - | - | 6 | 40 |
| 14 | I enjoy Pair-reading-tutoring for reading fluency and comprehension development | Boys | 1 | 2 | 11 | 34 |
| | | Girls | - | - | 3 | 43 |
| 15 | Digital-text of digital storytelling encourages me to take learning beyond school environment | Boys | - | - | 8 | 40 |
| | | Girls | - | - | 3 | 43 |

**KEY: 1. Very different from me.**

**2. Little different from me.**

**3. Little like me.**

**4. A lot like me.**

Table 4.5 contains the responses of reading interest of the participant after the treatment. The Table for example reveals that some 36 boys and 27 girls responded to "a lot like me" to item three that says, "I enjoy reading passages that are relevant to my culture".

Similarly, 37 boys and 27 girls chose “a lot like me” to item four stating that, “I enjoy passages that are appropriate to my level”. On the aspects of method of instructional delivery, 40 boys and 31 girls responded to “a lot like me” to item five that states, “I enjoy developing my reading fluency and comprehension skills more with mobile devices, than with chalk and board. Also, 40 boys and 43 girls chose “a lot like me” to item 15 stating that, “Digital Storytelling Strategies encourages me to take learning beyond school environment”. These responses are indicators that, Digital Storytelling Strategies has significantly influenced the interest of the participants.

Likewise, before the treatment the pupils from both rural and urban schools were assessed to be at low reading interest level as revealed in Table 4.6.

**Table 4.6 Pre-Test-Post-Tests of Pupils’ Interest Levels by Locations**

| **Interest Level** | **Pre-Test** | | | **Post-Test** | | |
|---|---|---|---|---|---|---|
| | **Rural** | **Urban** | **Total** | **Rural** | **Urban** | **Total** |
| Low | 47 | 47 | **94** | - | - | **-** |
| Mid | - | - | **-** | 3 | 5 | **8** |
| High | - | - | **-** | 44 | 42 | **86** |
| Stopped | - | - | **-** | - | - | **-** |
| **Total** | **47** | **47** | **94** | **47** | **47** | **94** |

Table 4.6 reveals that before the treatment both rural and urban schools were at low reading interest level. However, after exposing the pupils to Digital Storytelling Strategies, the story changed. For example, some 44 and 42 pupils from both rural and urban schools respectively moved to high reading interest level, with three and five pupils having middle reading interest level. The gap of reading interest level between the two schools after the treatment seems very narrow. However, to determine if the difference of the reading interest between the two schools is significant, the mean scores of the two schools before and after the treatment were summarised and compared in Table 4.7.

**Table 4.7 Mean Performance Scores of Reading Interest between Locations**

| Reading interest | Rural | | | Urban | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | N | SD | Mean | N | SD | Mean | N | SD |
| Pre-test score | 16.26 | 47 | 1.870 | 16.36 | 47 | 2.058 | 16.31 | 94 | 1.957 |
| Post-tests score | 53.85 | 47 | 4.965 | 50.87 | 47 | 5.265 | 52.36 | 94 | 5.305 |
| **Total** | | **94** | | | **94** | | | | |

Table 4.7 reveals that before the treatment pupils from the rural school (n = 47) have a mean score of 16.26, and pupils from the urban school (n = 47) scored a mean of 16.36, with only a mean difference of 0.1. After the treatment, the pupils from the rural school (n = 47) scored a mean of 53.85, while the pupils from the urban school scored a mean of 50.87. The mean difference between the schools is 2.98 in favour of the rural school.

### 4.1.2 Pre-and-Post-Test Reading Fluency Rates (WCPM) by Gender

In this section the fluency rates of the participants at both pre-and-post-tests are presented. Pupil's reading fluency rate is measured according the number of words correctly read per 60 seconds. Table 4.8 presents the pre-test scores of the individual pupil fluency rates according to gender. However, pupils stopped from either of the exercises were excluded from this presentation.

**Table 4.8 Pupils' ORF Pre-Test Scores (WCPM) by Gender**

| ORF (WCPM) | Gender | | Total |
|---|---|---|---|
| Rate | Boys | Girls | |
| 2 | 3 | 6 | 9 |
| 3 | 4 | 12 | 16 |
| 4 | 5 | 3 | 8 |
| 6 | 3 | 0 | 3 |
| 7 | 1 | 0 | 1 |
| 9 | 1 | 0 | 1 |
| 10 | 2 | 0 | 2 |
| 11 | 1 | 0 | 1 |
| 12 | 1 | 0 | 1 |
| 14 | 0 | 2 | 2 |
| 16 | 1 | 1 | 2 |
| 17 | 1 | 2 | 3 |
| 21 | 0 | 2 | 2 |
| 22 | 1 | 0 | 1 |
| 23 | 0 | 1 | 1 |
| 24 | 1 | 0 | 1 |
| 28 | 3 | 0 | 3 |
| 30 | 0 | 1 | 1 |
| 32 | 1 | 0 | 1 |
| 34 | 2 | 0 | 2 |
| 35 | 0 | 1 | 1 |
| 38 | 1 | 0 | 1 |
| 40 | 0 | 1 | 1 |
| 42 | 1 | 0 | 1 |
| 43 | 1 | 0 | 1 |
| 44 | 0 | 1 | 1 |
| 47 | 1 | 0 | 1 |
| 53 | 1 | 0 | 1 |
| 55 | 0 | 1 | 1 |
| 58 | 1 | 0 | 1 |
| Stopped | 11 | 12 | 23 |
| **Total** | **48** | **46** | **94** |

Table 4.8 shows that at the pre-test 58 was the highest WCPM scored by one boy. Also, some 23 pupils were stopped from the exercise. This consists of 11 and 12 boys and girls respectively. The post-test scores are presented in Table 4.9

**Table 4.9 Pupils ORF Post-Test (WCPM) Scores**

| ORF (WCPM) SCORES | Gender | | Total |
|---|---|---|---|
| | Boys | Girls | |
| 1 | 0 | 1 | 1 |
| 2 | 1 | 0 | 1 |
| 3 | 0 | 1 | 1 |
| 4 | 1 | 9 | 10 |
| 6 | 3 | 1 | 4 |
| 7 | 2 | 1 | 3 |
| 8 | 2 | 0 | 2 |
| 9 | 1 | 0 | 1 |
| 10 | 2 | 0 | 2 |
| 12 | 1 | 1 | 2 |
| 13 | 2 | 0 | 2 |
| 14 | 3 | 0 | 3 |
| 15 | 1 | 0 | 1 |
| 18 | 1 | 0 | 1 |
| 20 | 2 | 0 | 2 |
| 21 | 0 | 1 | 1 |
| 22 | 0 | 1 | 1 |
| 24 | 2 | 0 | 2 |
| 25 | 0 | 2 | 2 |
| 27 | 1 | 0 | 1 |
| 28 | 0 | 1 | 1 |
| 35 | 1 | 0 | 1 |
| 42 | 1 | 0 | 1 |
| 43 | 0 | 2 | 2 |
| 48 | 1 | 0 | 1 |
| 51 | 0 | 1 | 1 |
| 55 | 1 | 0 | 1 |
| 56 | 0 | 1 | 1 |
| 57 | 1 | 0 | 1 |
| 61 | 1 | 0 | 1 |
| 62 | 0 | 1 | 1 |
| 73 | 1 | 0 | 1 |
| 74 | 0 | 1 | 1 |
| 75 | 1 | 1 | 2 |
| 76 | 0 | 1 | 1 |
| 77 | 1 | 0 | 1 |
| 78 | 1 | 1 | 2 |
| 84 | 1 | 0 | 1 |
| 87 | 1 | 0 | 1 |
| 94 | 1 | 0 | 1 |
| 96 | 1 | 0 | 1 |
| 99 | 0 | 1 | 1 |
| 100 | 0 | 1 | 1 |
| 107 | 1 | 0 | 1 |
| 111 | 1 | 0 | 1 |
| 117 | 1 | 0 | 1 |
| 118 | 1 | 0 | 1 |
| 121 | 0 | 1 | 1 |
| 123 | 2 | 1 | 3 |
| Stopped | 3 | 14 | 17 |
| **Total** | **48** | **46** | **94** |

Table 4.9 shows that after treatment some three pupils comprising two boys and one girl scored up to 123 WCPM respectively. Also, only 17 pupils were stopped, with girls having the larger number up to 14. The scores in Tables 4.8 and 4.9 were converted into accuracy levels of frustration, instructional and independent and summarised in Table 4.10

**Table 4.10 Pre-and-Post-Tests Reading Fluency Levels between by Gender**

| ORF | | Pre-Test | | | Post-Test | |
|---|---|---|---|---|---|---|
| **Level** | **Boys** | **Girls** | **Total** | **Boys** | **Girls** | **Total** |
| Frustration | 33 | 30 | **63** | 27 | 20 | **47** |
| Instructional | 4 | 4 | **8** | 16 | 12 | **28** |
| Independent | - | - | **-** | 2 | 0 | **2** |
| Stopped | 11 | 12 | **23** | 3 | 14 | **17** |
| **Total** | **48** | **46** | **94** | **48** | **46** | **94** |

Table 4.10 shows that at the pre-test, 33 boys and 30 girls were at frustration level scoring between 0-39% ORF accuracy level; and 11 girls and 12 boys were stopped from the exercise. The pupils were stopped failure to read a single word of the passage in 15 seconds. However, after the treatment, the number of pupils at the frustration level reduced to 27 and 20 boys and girls respectively. Also, the number of pupils at instructional level (40-79%) increased to 16 and 12 boys and girls respectively, with two boys scaling to independent level (90+%). More significantly, total number of pupils stopped reduced from 23 to 17 pupils only. The table considerable shows observable gains between the pre-and-post-test assessments as the result of exposing the participants to digital storytelling strategies.

For example, at the pre-test exercise, only few pupils could read up to 40 to 58 WCPM. Similarly, the pupils could not correctly pronounce ***farmed, kilometres, customary, kept, stray, destroy, planted, homesteads, believed,*** and ***mutual.*** However, after the treatment,

most of the pupils could read up to 103 to 123 correct words per 60 seconds. These changes could be observed in the samples of pupils marked scripts presented in Appendices L1 and L2.

### 4.1.3 Pre-and-Post-Test of Pupils Fluency Rate (WCPM) by Location

This section presents the reading fluency rates of the pupils at both pre-and-post-tests by location. Table 4.11 presents the Oral reading fluency of the pupils at the pre-test score.

**Table 4.11 Pupils Pre-Test ORF Rates (WCPM) by Locations**

| ORF Rates (WCPM) | Location | | Total |
|---|---|---|---|
| | Rural | Urban | |
| 2 | 5 | 4 | 9 |
| 3 | 8 | 8 | 16 |
| 4 | 5 | 3 | 8 |
| 6 | 2 | 1 | 3 |
| 7 | 1 | 0 | 1 |
| 9 | 1 | 0 | 1 |
| 10 | 1 | 1 | 2 |
| 11 | 1 | 0 | 1 |
| 12 | 1 | 0 | 1 |
| 14 | 0 | 2 | 2 |
| 16 | 0 | 2 | 2 |
| 17 | 1 | 2 | 3 |
| 21 | 0 | 2 | 2 |
| 22 | 0 | 1 | 1 |
| 23 | 1 | 0 | 1 |
| 24 | 1 | 0 | 1 |
| 28 | 1 | 2 | 3 |
| 30 | 0 | 1 | 1 |
| 32 | 0 | 1 | 1 |
| 34 | 1 | 1 | 2 |
| 35 | 0 | 1 | 1 |
| 38 | 0 | 1 | 1 |
| 40 | 0 | 1 | 1 |
| 42 | 0 | 1 | 1 |
| 43 | 1 | 0 | 1 |
| 44 | 0 | 1 | 1 |
| 47 | 0 | 1 | 1 |
| 53 | 0 | 1 | 1 |
| 55 | 0 | 1 | 1 |
| 58 | 0 | 1 | 1 |
| Stopped | 16 | 7 | 23 |
| **Total** | **47** | **47** | **94** |

Table 4.11 reveals that before some 23 pupils were exempted from the assessment. 16 of those stopped from the exercise were from rural schools, with urban schools having seven pupils. The Table also reveals that only two pupils from rural school scored between 30-58 WCPM. This shows that at pre-test, pupils from urban schools were

having high number of low reading fluency rate. Table 4.12 presents the fluency rates of the participants after the treatment.

**Table 4.12 Pupils Post-Test ORF Rate (WCPM)**

| ORF Rate | Location | | Total |
|---|---|---|---|
| | Rural | Urban | |
| 1 | 1 | 0 | 1 |
| 2 | 1 | 0 | 1 |
| 3 | 0 | 1 | 1 |
| 4 | 4 | 6 | 10 |
| 6 | 3 | 1 | 4 |
| 7 | 2 | 1 | 3 |
| 8 | 1 | 1 | 2 |
| 9 | 1 | 0 | 1 |
| 10 | 2 | 0 | 2 |
| 12 | 0 | 2 | 2 |
| 13 | 2 | 0 | 2 |
| 14 | 2 | 1 | 3 |
| 15 | 0 | 1 | 1 |
| 18 | 1 | 0 | 1 |
| 20 | 2 | 0 | 2 |
| 21 | 0 | 1 | 1 |
| 22 | 0 | 1 | 1 |
| 24 | 1 | 1 | 2 |
| 25 | 0 | 2 | 2 |
| 27 | 0 | 1 | 1 |
| 28 | 0 | 1 | 1 |
| 35 | 0 | 1 | 1 |
| 42 | 1 | 0 | 1 |
| 43 | 0 | 2 | 2 |
| 48 | 0 | 1 | 1 |
| 51 | 0 | 1 | 1 |
| 55 | 0 | 1 | 1 |
| 56 | 1 | 0 | 1 |
| 57 | 0 | 1 | 1 |
| 61 | 0 | 1 | 1 |
| 62 | 0 | 1 | 1 |
| 73 | 1 | 0 | 1 |
| 74 | 1 | 0 | 1 |
| 75 | 0 | 2 | 2 |
| 76 | 0 | 1 | 1 |
| 77 | 0 | 1 | 1 |
| 78 | 1 | 1 | 2 |
| 84 | 1 | 0 | 1 |
| 87 | 0 | 1 | 1 |
| 94 | 1 | 0 | 1 |
| 96 | 1 | 0 | 1 |
| 99 | 0 | 1 | 1 |
| 100 | 0 | 1 | 1 |
| 107 | 0 | 1 | 1 |
| 111 | 0 | 1 | 1 |
| 117 | 1 | 0 | 1 |
| 118 | 0 | 1 | 1 |
| 121 | 0 | 1 | 1 |
| 123 | 1 | 2 | 3 |
| Stopped | 14 | 3 | 17 |
| **Total** | **47** | **47** | **94** |

Table 4.12 shows considerable improvement of pupils reading fluency rate compared to the result in Table 4.9. However, Table 4.10 reveals that even after the treatment pupils from rural school still maintained the high number of pupils exempted from the exercise. To have a better picture of these scores, the levels of pupils reading fluency at the two exercises are compared and presented in Table 4.13.

**Table 4.13 Pre-and-Post-Tests of Pupils Reading Fluency Levels by Locations**

| ORF Level | Pre-Test | | | Post-Test | | |
|---|---|---|---|---|---|---|
| | **Rural** | **Urban** | **Total** | **Rural** | **Urban** | **Total** |
| Frustration | 24 | 39 | **63** | 23 | 24 | **47** |
| Instructional | 7 | 1 | **8** | 10 | 18 | **28** |
| Independent | - | - | **-** | - | 2 | **2** |
| Stopped | 16 | 7 | **23** | 14 | 3 | **17** |
| **Total** | **47** | **47** | **94** | **47** | **47** | **94** |

Table 4.13 shows that before the treatment, 63 pupils comprising 24 and 36 pupils from Rural and Urban schools were reading at frustration level respectively. But, 23 comprising 16 and 7 pupils from Rural and Urban schools were respectively stopped from the exercise. After the treatment, the number of pupils at frustration level reduced to 47 comprising 23 from rural and 24 from urban schools respectively. The table also shows an increase in the number of pupils reading at instructional to 28, with two pupils scaling to independent level from the Urban school at the post-test. The table reveals considerable improvement in the scores of the participants between pre-and-post-tests as the result of exposing the pupils to digital storytelling strategies. The considerable differences recorded at the post-test reveal how DSTS positively improved the Reading Fluency of the participants.

### 4.1.4 Pupils Pre-and-Post-Test Comprehension Scores by Gender

The scores of pupils reading comprehension performance according to gender at both pre-and post-test are presented in this section. Table 4.14 contains the pre-test scores, while

the subsequent table contains the results of pupils reading comprehension scores after the treatment.

**Table 4.14 Pupils Pre-Test Comprehension Scores by Gender**

| Comprehension Scores | Gender | | Total |
|---|---|---|---|
| | Boys | Girls | |
| 0 | 32 | 26 | 58 |
| 10 | 2 | 5 | 7 |
| 20 | 2 | 2 | 4 |
| 30 | 1 | 1 | 2 |
| Stopped | 11 | 12 | 23 |
| Total | 48 | 46 | 94 |

Table 4.14 shows that before the treatment, 58 pupils comprising 32 boys and 26 girls scored 0. The table also reveals that some 11 and 12 boys and girls respectively were exempted from the exercise. Furthermore, the scores reveal that none of the participants scores above 30 marks before the treatment. The result of reading comprehension of the pupils after the treatment is presented in Table 4.15.

**Table 4.15 Pupils Post-Test Scores on Comprehension by Gender**

| Comprehension Scores | Gender | | Total |
|---|---|---|---|
| | Boys | Girls | |
| 0 | 23 | 14 | 37 |
| 10 | 3 | 3 | 6 |
| 20 | 3 | 5 | 8 |
| 30 | 3 | 1 | 4 |
| 40 | 1 | 3 | 4 |
| 50 | 4 | 3 | 7 |
| 60 | 4 | 1 | 5 |
| 70 | 3 | 2 | 5 |
| 80 | 1 | 0 | 1 |
| Stopped | 3 | 14 | 17 |
| **Total** | **48** | **46** | **94** |

Table 4.15 shows that some 37 pupils, 23 boys and 14 girls scored 0, with only 17 of them being exempted from the exercise. This reveals considerable improvement in pupils' comprehension scores compared to their performance before the treatment presented in

Table 4.13. Table 4.16 compares the comprehension levels of the pupils at both pre-and-post-test.

**Table 4.16 Pre-and-Post-Tests of Comprehension Levels by Genders**

| Comprehension Level | Pre-Test | | | Post-Test | | |
|---|---|---|---|---|---|---|
| | **Boys** | **Girls** | **Total** | **Boys** | **Girls** | **Total** |
| Unsatisfactory | 37 | 34 | **71** | 32 | 33 | **65** |
| Satisfactory | - | - | **-** | 9 | 7 | **16** |
| Excellent | - | - | **-** | 4 | 2 | **6** |
| Stopped | 11 | 12 | **23** | 3 | 4 | **7** |
| **Total** | **48** | **46** | **94** | **48** | **46** | **94** |

Table 4.16 shows that, at the pre-test, a total number of 71 pupils – 37 boys and 34 girls had unsatisfactory comprehension level of between 0-39 marks; and 23 pupils -11 boys and 12 girls were stopped from the exercise. However, after the treatment, the considerable increase in both genders' level of comprehension were noted. For example, number of pupils at unsatisfactory comprehension level reduced from 71 to 65. Also, 16 pupils - nine boys and seven girls, moved to satisfactory level; and six scaled to excellent level- four boys and two girls. Then, only seven pupils were stopped at the post-test as against 23 pupils stopped at the pre-test level. These remarkable gains between pre-and-post-test assessments, indicates that DSTS has significantly enhanced the reading comprehension of the participants.

### 4.1.5 Pre-and-Post-Tests of Pupils Comprehension Scores by Location

In this section the reading comprehension performance of the pupils according schools' location are presented in Tables 4.17 and 4.18 respectively.

**Table 4.17 Pupils Pre-Test Comprehension Scores by Location**

| Comprehension Scores | Location | | Total |
|---|---|---|---|
| | Rural | Urban | |
| 0 | 30 | 28 | 58 |
| 10 | 0 | 7 | 7 |
| 20 | 1 | 3 | 4 |
| 30 | 0 | 2 | 2 |
| Stopped | 16 | 7 | 23 |
| Total | 31 | 40 | 71 |

Table 4.17 shows that before the treatment some 58 pupils from both rural and urban schools scored 0. The table reveals that only some two pupils from the urban school scored 30 marks. Also, according to the table, some 71 of the were stopped from the exercise. Table 4.18 presents the post-test reading comprehension scores of the pupils.

**Table 4.18 Pupils Post-Test Comprehension scores by Location**

| Comprehension Scores | Location | | Total |
|---|---|---|---|
| | Rural | Urban | |
| 0 | 23 | 14 | 37 |
| 10 | 2 | 4 | 6 |
| 20 | 0 | 8 | 8 |
| 30 | 1 | 3 | 4 |
| 40 | 0 | 4 | 4 |
| 50 | 3 | 4 | 7 |
| 60 | 2 | 3 | 5 |
| 70 | 2 | 3 | 5 |
| 80 | 0 | 1 | 1 |
| Stopped | 14 | 3 | 17 |
| **Total** | **47** | **47** | **94** |

Table 4.18 shows that after the treatment only some 37 pupils from both rural and urban schools scored 0. The result also reveals that some 15 pupils from urban schools scored between 40-80 marks. Also, only some 17 pupils were stopped from the exercise from both schools. Compared to the pre-test scores in Table 4.16, this revealed considerable

improvement in the reading comprehension performance of the pupils between schools. Table 4.19 compares and presents the reading comprehension levels of the pupils between schools at both pre-and-post-tests.

**Table 4.19 Pre-Test-Post-Tests of Reading Comprehension Levels by Locations**

| Comprehension Level | Pre-Test | | | Post-Test | | |
|---|---|---|---|---|---|---|
| | **Rural** | **Urban** | **Total** | **Rural** | **Urban** | **Total** |
| Unsatisfactory | 31 | 40 | **71** | 26 | 29 | **55** |
| Satisfactory | - | - | **-** | 5 | 11 | **16** |
| Excellent | - | - | **-** | 2 | 4 | **6** |
| Stopped | 16 | 7 | **23** | 14 | 3 | **17** |
| **Total** | **47** | **47** | **94** | **47** | **47** | **94** |

Table 4.19 reveals that, before the treatment, 71 pupils comprising 31 and 40 pupils from Rural and Urban schools were reading at unsatisfactory level. Similarly, 23 comprising 16 and 7 from Rural and Urban schools were stopped from the task; with not a single pupil scoring at satisfactory and excellent levels. After the treatment, the number of pupils at unsatisfactory level reduced to 55, with a total of 16 and 6 scoring at satisfactory and excellent comprehension level from both Rural and Urban schools respectively. Also, the number of pupils stopped at the post-test, reduced to 17, against 23. These remarkable positive changes reported after the treatment indicate that DSTS have significantly enhanced the comprehension of the participants.

### 4.2 Answering the Research Questions

The five research questions asked in section one, were answered in this section. To answer the research questions, the data were presented descriptively in tabular in form of mean and standard deviation.

### 4.2.1 Research Question One

Is there any significant difference in the level of interest at pre-and-post-test of pupils with reading difficulties as the result of exposure to Digital Storytelling Strategy in the study area? To answer this question, the mean scores of both the pre-test and post-test of the pupils' Interest levels are presented in Table 4.20.

**Table 4.20 Pupils' Mean Interest Levels at Pre- and-Post-Tests of PURED**

| Tests | Mean | Mean Difference | SD | N |
|---|---|---|---|---|
| Pre-Test Interest Level | 16.31 | **36.05** | 1.957 | 94 |
| Post-Test Interest Level | 52.36 | | 5.305 | 94 |

Table 4.20 shows that before the treatment, the pupils (n = 94) scored a mean of 16.31. However, after the treatment the pupils scored a mean of 52.36. The mean difference between the two assessments was 36.05. This answers the research question, that there was significant difference in the level of interest of pupils with reading difficulties as the result of exposure to Digital Storytelling Strategy in the study area. The interest scores of the pupils at both pre-and-post-tests were presented in Tables 4.1 and 4.2 respectively.

### 4.2.2 Research Question Two

Is there any significant difference in the level of ORF between boys and girls with reading difficulty as the result of exposure to Digital Storytelling Strategies in Sokoto State? To answer this question, the mean scores of the post-test assessment between gender, excluding those exempted from the tasks was compared and presented in Table 4. 21.

**Table 4.21 Means of Levels of Reading Fluency between Genders**

| Gender | Mean | SD | Mean Difference | N | Excluded | Total |
|---|---|---|---|---|---|---|
| Boys | 43.82 | 40.196 | 6.728 | 45 | 3 | 48 |
| Girls | 37.09 | 38.152 | | 32 | 14 | 46 |
| **Total** | | | | **77** | **17** | **94** |

Table 4.21 reveals that, after the treatment, boys (n = 45) had a mean score of 43.82, while the girls (n=32) had a mean score of 37.09. The table shows a means difference of 6.7 in favour of the boys. This answers the research question that, there was significant difference in the mean scores of pupils with reading difficulties between gender as the result of exposure to digital storytelling strategy in the study area.

### 4.2.3 Research Question Three

Is there any significant difference in the level of reading fluency between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State? To answer this question, it is important to compare pre-test and post-test levels of the participants in reading fluency to establish if the exercise recorded any gain. Furthermore, the mean scores of the post-test assessment between schools, excluding those stopped at the two exercises are presented in Table 4.22.

**Table 4.22 Means of Reading Fluency Levels between Locations**

| Area of the school | Mean | Mean Difference | SD | N | Excluded | Total |
|---|---|---|---|---|---|---|
| Rural | 32.15 | **15.53** | 37.355 | 33 | 14 | 47 |
| Urban | 47.68 | | 39.726 | 44 | 3 | 47 |
| **Total** | | | | **77** | **17** | **94** |

Table 4.22 reveals that after the treatment, Rural school has a mean of 32.15, while the Urban school has a mean of 47.68, with a mean difference of 15.53 in favour of pupils

from urban schools. This shows that there was significant difference in the level of ORF between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State.

### 4.2.4 Research Question Four

Is there any significant difference in the reading comprehension level between boys and girls with reading difficulty as the result of exposure to Digital Storytelling Strategies in Sokoto State? To answer this question, Table 4.23 presents the means scores of the two assessments by genders, excluding those stopped from the two exercises.

**Table 4.23 Means of Reading Comprehension Levels between Gender**

| Gender | Mean | Mean Difference | SD | N | Excluded | Total |
|---|---|---|---|---|---|---|
| Boys | 21.11 | **1.42** | 26.648 | 45 | 3 | 48 |
| Girls | 19.69 | | 23.069 | 32 | 14 | 46 |
| **Total** | | | | **77** | **17** | **94** |

Table 4.23 illustrates that, after the treatment, boys (n=45) have a mean score of 21.11 with three of them being stopped from the test. Girls (n=32) have a mean score of 19.69 with 14 girls being stopped from the test. The mean difference between boys and girls is 1.42 in favours of the boys. This answers the research question that, there was difference in the reading comprehension level between boys and girls with reading difficulty as the result of exposure to Digital Storytelling Strategies in Sokoto State.

### 4.2.5 Research Question Five

Is there any significant difference in the level of reading comprehension between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State? Table 4.24 presents the means scores reading comprehension of the pupils at post-test between location.

**Table 4.24 Means of Reading Comprehension Levels between Locations**

| Area of the school | Mean | Mean Difference | SD | N | Excluded | Total |
|---|---|---|---|---|---|---|
| Rural | 13.94 | **11.51** | 24.487 | 33 | 14 | 47 |
| Urban | 25.45 | | 24.633 | 44 | 3 | 47 |
| **Total** | | | | **77** | **17** | **94** |

Table 4.24 reveals that, after the Rural school (n=33) scored a mean of 13.94, and fourteen of them were excluded from the exercise. The Urban school (n=44) scored a mean of 25.45, with three of them being stopped from the exercise. The mean difference between the two schools was 11.51 in favour of pupils from the urban school. This answers the research question that, there was difference in the level of reading comprehension between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State.

### 4.3. Null-Hypotheses Testing

In this section, five null-hypotheses stated in Chapter One were tested at $\alpha \leq 0.05$ level of significance. t-Test Related and Independent Samples were employed to test the null-hypotheses because the participants were measured at both pre-and-post-tests by genders and schools' locations.

#### 4.3.1 Null-Hypothesis One

There is no significant difference in the level of interest at pre-and-post-tests of pupils reading difficulty exposed to Digital Storytelling Strategies in Sokoto State. The hypothesis was tested using t-Test related samples. Table 4.25 presents the result of the computation.

**Table 4.25 T-Test Related Samples on Interest at Pre-and-Post-Tests**

| Tests | Mean | N | SD | T | Df | Sig (2-tailed) |
|---|---|---|---|---|---|---|
| Pre-Test Reading Interest level | 16.31 | 94 | 1.957 | -66.692 | 93 | .000 |
| Post-Test Reading Interest level | 52.36 | 94 | 5.305 | | | |

t (94) = -66.179, P =.000

Table 4.25 reveals that the t-value was calculated at -66.176, with p-value at .000, less than $\alpha \leq 0.05$ significant level. Since the p-value (.000) was less than P-value, the null hypothesis was rejected. This implies that, there was significant difference in the level of interest of pupils with reading difficulties as the result of exposure to Digital Storytelling Strategy in the study area.

### 4.3.2 Null-Hypothesis Two

There is no significant difference in the level of reading fluency between boys and girls with reading difficulty as the result of exposure to Digital Storytelling Strategies in Sokoto State. The summary of the Independent Samples T-test is presented in Table 4.26.

**Table 4.26 Independent Samples t-Test on Reading Fluency between Gender**

| Test | Gender | N | Mean | Mean Difference | SD | t | Df | P |
|---|---|---|---|---|---|---|---|---|
| Post-Test Level of Reading | Boys | 45 | 43.82 | **6.728** | 40.196 | .739 | 75 | .462. |
| Accuracy | Girls | 32 | 37.09 | | 38.152 | | | |
| **Total** | | **77** | | | | | | |

t (77) = .739, P = .462

The result in Table 4.26 shows that the t-value was obtained at .739, with p-value of .462 at 75 degrees of freedom. The p-value obtained was greater than the alpha value of 0.05. this indicates that there is no significant difference in the level of reading fluency between boys and girls with reading difficulty exposed to Digital Storytelling Strategy in Sokoto State. Therefore, the null-hypothesis was retained.

### 4.3.3 Null-Hypothesis Three

There is no significant difference in the level of reading fluency between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State. The summary of the analysis is presented in Table 4.27.

**Table 4.27 Independent Samples t-Test on Reading Fluency between Location**

| Test | Location | N | Mean | Mean Difference | SD | t | df | P |
|---|---|---|---|---|---|---|---|---|
| Post-Test Level of Reading Fluency | Rural | 33 | 32.15 | **-15.530** | 37.355 | -1.741 | 75 | .086 |
| | Urban | 44 | 47.68 | | 39.726 | | | |

The result in Table 4.27 reveals that the t-value was obtained at – 1.741, with p-value of .086. The p-value of .086 is greater than the stated boundary of alpha 0.05. This reveals that there was no significant difference in the level of reading comprehension between rural and urban schools with reading difficulty exposed to Digital Storytelling Strategy in Sokoto State. Therefore, the null hypothesis was retained.

### 4.3.4 Null-Hypothesis Four

There is no significant difference in the reading comprehension level between boys and girls with reading difficulty as the result of exposure to Digital Storytelling Strategies in Sokoto State. Table 4.28 presents the summary of the Independent Samples t-Test.

**Table 4.28 Independent t-Test on Level of Reading Comprehension by Gender**

| Test | Gender | N | Mean | Mean Difference | SD | t | df | sig |
|---|---|---|---|---|---|---|---|---|
| Post-Test Level of Reading Comprehension | boys | 45 | 21.11 | **1.424** | 26.648 | .244 | 75 | .808. |
| | girls | 32 | 19.69 | | 23.069 | | | |
| **Total** | | **77** | | | | | | |

t (77) =.244, P =.808

The summary of the Independent Samples t-test in Table 4.28 shows that the t-value was calculated at 0.244, with the p-value at .808. This implies that there was no significant difference in the reading comprehension level between boys and girls with reading

difficulty as the result of exposure to DSTS in Sokoto State. Thus, the Null-hypothesis was retained.

### 4.3.5 Null Hypothesis Five

There is no significant difference in the level of reading comprehension between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State. Independent Samples t-test was employed to tell if the differences of the mean scores between the schools are statistically significant. Table 4.29 presents the summary of the computation.

**Table 4.29 Independent t-test on Comprehension Scores Post-Tests by Locations**

| Test | Location | N | Mean | SD | t | df | sig |
|---|---|---|---|---|---|---|---|
| Post-Test Level of Reading Comprehension | Rural | 33 | 13.94 | 24.487 | -2.035 | 75 | .045 |
| | Urban | 44 | 25.45 | 24.633 | | | |
| **Total** | | **77** | | | | | |

t (77) =-2.035, P = .045

The t-test summary in Table 4.29 revealed there was significant difference in the level of reading comprehension between rural and urban pupils with reading difficulties exposed to Digital Storytelling Strategies in Sokoto State. The table shows that the t-value was calculated at -2.035, with p-value of .045. Since the p-value of .045, is less than $\alpha \leq 0.05$, the null hypothesis was rejected.

## 4.4 Summary of Overall Findings

This section summarises overall findings of the study in relation to the research questions asked and the null-hypotheses formulated in sections 1.4 and 1.5 of chapter one respectively. The following is the summary of the findings of the study:

a. A significant difference was found in the level of interest of pupils with reading difficulties exposed to Digital Storytelling Strategy in the study area. Table 4.17 shows that, at pre-test, the pupils scored a mean of 16.31 as against 52.36 after the treatment. The encouraging increase in the pupils mean scores at post-test informs that, DSTS positively stimulate and increase the reading interest level of the participants in engaging with their reading tasks.

b. No significant difference was found in the level of reading fluency between boys and girls with reading difficulties exposed to Digital Storytelling Strategy. Table 4.18 compares the mean scores of the pupils after the treatment showing that, boys (n=45) score higher mean of 43.82, while girls (n=32) score a mean of 37.09, with a difference of only 6.73. However, the different mean score in favour of the boys was not significant enough to place the girls at disadvantage.

c. No significant difference was found in the level of reading fluency between rural and urban pupils with reading difficulties because of exposure to Digital Storytelling Strategy. Tables 4.19 compares the mean scores of the pupils at post-tests. The table shows that, urban (n = 44) has a high mean score of 47.68, while, rural school (n=33) scored a mean of 32.15, with a mean difference of 15.53 in favour of the urban schools after the treatment. This implies that Digital Storytelling Strategies have improve both the decoding and fluency rate of the participants.

d. No significant difference was found in the level of reading comprehension between boys and girls with reading difficulties exposed to Digital Storytelling Strategy. Table 4.20 reveals that boys (n =45) score high mean of 21.11, against their counterpart (n = 32) who scored a mean of 19.69 after the treatment. This reveals a mean difference of 1.42 in favour of boys. The difference means score was not significant enough to place the female gender at disadvantage academically. This implies that Digital Storytelling Strategies are gender friendly by increasing the comprehension level of both genders after the treatment.

e. No significant difference was found in the level of reading comprehension between rural and urban pupils with reading difficulties exposed to Digital Storytelling Strategy in the study area. Table 4.21 reveals that urban school (n = 44) scores a mean of 25.45, against the rural school (n = 33) scoring a mean of 13.94. This shows a mean difference of 11.51 in favour of urban school. However, the mean difference was not significant enough to put the rural participant at disadvantage academically. This suggests that Digital Storytelling Strategies have improve the comprehension level of both pupils from rural and urban schools after the treatment. Hence, the sociable nature of the strategies demographically.

## 4.5 Discussion of the Findings

This study explores Impacts of Digital Storytelling Strategies on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State of Nigeria. In this section, the research findings were discussed around the five null-hypotheses formulated in Chapter one.

The first finding reveals that there was a significant difference between the level of interest of the pupils with reading difficulties exposed to Digital Storytelling Strategy in Sokoto State. The interest level between pre-and-post-test assessments as reveals in Table 4.3 reveals how Digital Storytelling Strategy stimulates the interest of the participants. The finding confirms the assertion that, the prevalent traditional form of instructional delivery, particularly to pupils with reading difficulties is no more appealing the interest of pupils to reading (Garba & Olaofe, 2012). The outcome was attributed to equal exposure to both school types, using mobile devices (Portable DVD). According to Critten & Kucirkova (2015) historically, children with learning difficulties have been the early adopters of educational technology to facilitate their learning. Lastly, the finding supports the theoretical view of the present study that, if PURED were instructed with multimedia; and repeated reading strategies their interest to reading would be enhanced. This is illustrated in Tables 4.3 to 4.5

The second finding reports no significant difference between the level of reading fluency between boys and girls with reading difficulty exposed to Digital Storytelling Strategies in Sokoto State. This reveals that DSTS is gender friendly suitable for reading instruction to pupils with reading difficulties. The finding also confirms the assertion that pupils with reading difficulties learn better when instructed via the multimedia elements (Weng,

Walker, & Rosenblatt, 2015; Mercer & Mercer, 1993; Murphy, 1997; Birsh, 2006; Carreker, 2006; IDA, (2017). Likewise, the finding agrees with Hitchcock, Prater & Dowrick (2004) assertion that use of technology in an interventional approach to pupils with reading difficulties improve their achievement scores. This was illustrated in Table 4.11 which reveals that at the pre-test, some 63 pupils were at frustration level scoring at 0-39% ORF accuracy level; and 23 were stopped from the exercise failure to read a single word of the passage in 15 seconds. However, after the treatment, the number of pupils at the frustration level reduced to 47 only. Also, the number of pupils at instructional level (40-79%) increased to 28; with some two boys scaling to independent level (90+%). More significantly, the total number of pupils stopped reduced from 23 to 17 pupils only.

The third finding reports no significant difference on reading fluency level between Urban and Rural pupils with reading difficulties exposed to Digital Storytelling Strategy in Sokoto State. This finding proves the inclusive potentialities of Digital Storytelling Strategy. The finding is an attestation that the reading comprehension level of both rural and urban pupils improves. Similarly, Murphy (1997) examined whether a multi-sensory approach to spelling instruction would have an impact on spelling achievement. The study reported that there was no significant difference between the groups. Also, the finding confirms the reports of Wright (2001); Denton, Bryan, Wexler, Vaugh (2007); and IDA (2013) that multimedia elements are effective reading comprehension strategies for pupils with reading difficulties. This was illustrated in Table 4.13 which reveals that after the treatment, some 16 pupils - nine boys and seven girls, moved to satisfactory level; and six scaled to excellent level- four boys and two girls. Also, some seven pupils were stopped at the post-test as against 23 pupils stopped at the pre-test level.

The fourth finding reports no significant difference in the reading comprehension level between boys and girls with reading difficulty exposed to digital storytelling in Sokoto State. This corroborates with Salkhord, Gorjian & Pazhakh (2013) who reported that, digital stories affect the learners' reading comprehension positively among Iranian pupils through an internet-based instruction. Similarly, O'Donnell (2015) reported that digital technology in reading related instructions offers viable resources to aid the reading skills of pupils with reading difficulties. Also, the number of pupils consistently remaining at unsatisfactory level after the treatment, confirms Saskatchewan Learning (2004) assertion. Their assertion is that if reading intervention is delayed until nine years of age, approximately 75% of the pupils may continue to have reading difficulties. This was illustrated in Table 4.18. The table reveals that, even after the treatment 32 boys (34%) and 33 girls (35%) remained at unsatisfactory level (0-39 scores).

The fifth finding reports that, there was a significant difference between the reading comprehension level between rural and urban pupils with reading difficulties exposed to Digital Storytelling Strategy in Sokoto State. Table 4.24 shows that urban school (n=44) obtained high mean score of 25.45 as against rural school with (n=33) scoring a mean of 13.49. Despite the significant difference, the rural school was not hindered as the result of Digital Storytelling instructional strategy. The finding supports the assertion of the study that majority of pupils with reading difficulties are found in rural communities where reading is not encouraged. Also, Lesaux (2012) reports that linguistic diversity and poverty are two major factors that negatively affect pupils' comprehension score. According to Lesaux (2012), poverty; and, having to develop academic knowledge in a language the pupils are yet proficient with; increases the likelihood of reading failure for pupils from low-income family. Furthermore, California Department of Education (CDE)

(2009); Joseph (2006); and Wennersten (2013) reported that pupils with reading difficulties in most cases may demonstrate low comprehension scores even when provided with appropriate intervention. Table 4.18 illustrated that even after the treatment 58% of the participants remained at unsatisfactory comprehension level of between 0-39 scores.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter discusses the summary, implications, conclusions and recommendations based on the findings of the study. The chapter also provides areas for further studies.

## 5.1 Summary

This study explored the Impacts of Digital-Storytelling-Strategies on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties (PURED) in Sokoto State, Nigeria. The major problem that inspired the conduct of the study was the predominant use of traditional instructional method in teaching reading skills to primary school pupils irrespective of their learning conditions, in the State. The study has a sample size of 94 pupils drawn from two primary schools- one each, from rural and urbans schools. Ten reading passages were selected and converted into running passages, Mp3 audio, and Mp4 video with subtitles were used to teach the participants of the study. DSTS U. G. Third Person Approach developed by the researcher was used for the text conversion. Static Group Pre-test and Post-test Design was employed for the study. Five research questions were asked about any significant difference in the level of interest at pre-and-post-test; reading fluency level between boys and girls, and between rural and urban pupils. Other questions involve reading comprehension level between boys and girls; and between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State.

Similarly, five null-hypotheses were formulated and statistically tested at alpha 0.05 levels of significance. These hypotheses revolved on interest at pre-and-post-tests of pupils. The hypotheses also tested reading fluency between boys and girls; reading fluency between rural and urban pupils; reading comprehension level between boys and

girls; and reading comprehension between rural and urban pupils with reading difficulties as the result of exposure to Digital Storytelling Strategies in Sokoto State.

Related and Independent Samples t-tests were employed to test the null-hypotheses accordingly. The findings of the study are there was significant difference in the level of interest between pre-and-post-tests; and there was significant difference in the level of reading comprehension between rural and urban pupils with reading difficulties exposed to Digital Storytelling Strategy in Sokoto State. But there was no significant difference in the levels of reading fluency between boys and girls; reading fluency between rural and urban schools; and reading comprehension between boys and girls with reading difficulties exposed to Digital Storytelling Strategies in Sokoto State.

## 5.2 Implications of the Study

The implications of the findings of this study are highlighted in this section. The implications are discussed under five headings - teachers, school administrators, state universal basic education board, teachers' training institutions, publishers of primary school reading material - these being the major concerns for this study.

### 5.2.1 Implications for Primary Schools Teachers

The findings of this study inform that, Digital Storytelling Strategy was found to be amiable to pupils with reading difficulties regardless to gender or school locations. This implies that pupils with reading difficulties irrespective of their gender or their school location, would be intrinsically stimulated to be engaged on their reading activities. Passey, Rogers, Marchell, & McHugh (2004) support this assertion that, digital

technology has the potentialities to intrinsically motivate and enhance pupils' reading outcomes regardless to their gender or school demographic differences. It was also, reported that, children with learning related disabilities had been the early adopters of educational technology to facilitate their learning (Critten & Kucirkove 2015).

In view of this, Asinbajo (2016) advocates that, primary school teachers should not remain as mono-skilled-traditional ridden-teacher. But they should try as much to be versatile operators of digital technology in the classroom of the 21st century pupils. Primary school teachers could achieve this by enrolling for professional development programmes, particularly in the areas of Digital Storytelling approaches to develop their teaching skills. Such programme would facilitate the teachers to integrate mobile devices as assistive gadgets across curriculum to carter for those pupils struggling with learning related problems. All these are based on the consideration that; multimedia has eventually come to stay. It forms 21st century mode of communications; it has overtaken both social and economic landscape. Multimedia has also pose a formidable challenge in the way we teach and learn for educational related-professional development.

Hence, any stake-holder in the education industry who fails to meet with the demands of multimedia literacies in motivating his pupils, to be engaged in their learning activities, is not helping his pupils to develop 21st century skills. Teachers' professional development in multimedia literacies have today, become necessary, going by the results of this study. The results of this study have proven that, the old - aged conventional method is no more appealing the interest of pupils for reading.

### 5.2.2 Implications for Primary Schools Administrators

Based on the findings of this study, school administrators, particularly the headmasters in the public primary schools, should encourage their teachers to pursue additional digital and visual literacy skills through in-house staff training. With this effort, primary school teachers in the state would gradually obtain the necessary digital and visual literacy skills to integrate mobile-learning strategy into their various schools. Mobile learning (Singh, 2011; Piper, Jepkemei, Kwayumba, & Kibukho, 2015; Adedoja & Oyekola, 2008) is activity based and is an emerging learning trend that takes place with digital mediating tools or devices. The essence of mobile learning is to make the learning process more flexible, accessible and personalised. Digital Storytelling elements are amiable to mobile devices. These mobile devices, unlike personal computer, are more affordable and accessible especially when learning with technology in the rural or remote areas (Singh, 2011; Piper et al, 2015).

### 5.2.3 Implications for Curriculum Planners

The findings of this study have added to the existing literature that, pupils with reading related difficulties learn best when instruction is presented in different modalities (Mercer & Mercer, 1993; Murphy, 1997; Birsh, 2006; Carreker, 2006). The implication here is, the curriculum planners, with reference to NERDC should adapt the DSTS Curriculum developed by this study to carter for the plight of teaming population of pupils with reading difficulties in Nigeria. Based on the consideration according to Powell (2011) that if a child is not at the right reading level at primary three, he is a candidate for jail at age18 of years. Powell added that “and we have the highest incarceration rate because we're not getting our kids the proper start in life”. There are many empirical evidences supporting Powell’s assertion in the study area (Olaofe, 2001; 2010; RTI, 2011; Garba, 2013) about the public primary schools’ children getting into post primary schools who

are unable to read or write. Furthermore, recording Sokoto State as one of the states with high percentage of (62%) pupils out of school in Nigeria by UNESCO (2013) is another support to Powell's assertion.

With these empirical evidence, any child who get out of school unable to read has already become liability to the state and the community as well. That kind of person could not employ anybody and as well could not be employed. Secondly, it is easier for the dropouts to be engaged in criminal activities than those pursuing their educational career. Hence, the need for urgent primary school curriculum review to align with 21st century digital and visual literacy skills. For it is a greatest deformity for any primary education programme to succeed in making a pupil unable to read and write at the end of their primary school training period due to archaic and boring instructional Strategy (Olaofe, 2001).

### 5.2.4 Implications for Teachers' Training Institutions

The findings of this study reveal that digital storytelling strategy was amiable to both gender and school location in influencing the interest of pupils with reading difficulties. Secondly, and enhance the reading fluency and comprehension activities. Therefore, teachers' training institutions – such colleges of education and universities should review their curriculum to embed multimedia literacy. Also, a unit for Multimedia literacy should be established for this purpose. In this view, U. G. Third Person Approach for teacher generated (content-based) Digital Storytelling (2018); and the developed multimedia curriculum could be adopted for this purpose to carter for pupils with reading difficulties.

### 5.2.5 Implications for Publishers of Primary Schools English Reading Texts

Based on the findings of the study, publishers of primary school reading materials should be converting their materials into multimedia elements. This was due to the impact this study reveals that digital storytelling has on pupils with reading difficulties. The review on mobile leaning devices and software applications for digital Storytelling would offer tremendous assistance in this respect.

## 5.3 Conclusion

The aim of this study was to explore the Impacts of Digital Storytelling Strategies on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties in Sokoto State of Nigeria. It is possible therefore to, based on the findings of this study conclude that:

a. Digital Storytelling strategy has the potential of influencing the intrinsic motivation of PURED to actively participate in their reading activities across gender, rural and urban schools in the study area.
b. Multimedia elements of digital storytelling have the capacity to enhance the reading fluency of boys and girls exposed to the strategy in the study area.
c. The strategy has increased the reading comprehension levels of both rural and urban pupils with reading difficulties in the study area.
d. The study has shed new light that digital storytelling was amiable to both gender and location of pupils with reading difficulties in the study area.
e. The screening batteries of the study has proven capable for early identification of pupils with reading difficulties for possible placement or intervention.
**f.** Digital storytelling has proven to be an inclusive learning strategy that could be deployed to provide equal access to teaching and learning in an inclusive classroom setting.

## 5.4 Contribution to Knowledge

The contributions of this study are enumerated as follows:

a. This study was the first to employ DSTS with focus to Pupils with reading difficulties in the study area. This is a major contribution to knowledge. Moreover, the study has broken new ground, that DSTS influences the interest of PURED to reading and enhances pupils' reading fluency and comprehension both according to gender and school locations.

b. Based on the review of the existing literature, mostly in the United States and Asia, the study discovered that DSTS was not commonly used for reading fluency and comprehension, particularly, targeting pupils with special needs. This study has therefore bridged both geographical and sample gaps by conducting the study in Nigeria with a special interest on pupils with reading difficulties. The study thereby contributes to knowledge by bridging these two literature gaps.

c. The study purposely developed a U.G. Third-Person Approach for creating teacher generated Digital Storytelling Strategy presented in Table 2.8. With this approach, teachers could use pupils' reading materials to produce teacher-generated multimedia for teaching and learning purposes. That also, is a major contribution to knowledge.

d. The Treatment procedure of the study was developed into curriculum tagged DSTS curriculum for reading fluency and comprehension of pupils with reading difficulties. This also is another major contribution to knowledge

e. The Multimedia Repeated Reading theoretical framework developed by the researcher as a basis for the study facilitates both reading fluency and comprehension of the pupils with reading difficulties.

## 5.5 Recommendations

Considering the place of interest, reading fluency and comprehension of pupils with reading difficulties socio-economically, particularly in the present competitive digital era, the following recommendations were made based on the findings of the study:

a. Use of multimodal-text of digital storytelling should be embedded via mobile devices in the public primary schools to cater for the teaming population of pupils with reading difficulties in the study area.
b. Primary school administrators, particularly the headmasters in the public primary schools, should encourage their teachers to pursue additional digital and visual literacy skills through in-house staff training. With this effort, primary school teachers in the state would gradually acquire the necessary digital and visual literacy skills to integrate mobile-learning Strategy into their various schools.
c. Curriculum planners should among other factors, consider the plight of disfluent reader who are reading with difficulties in class five. By designing ICT based instructional material using mobile devices, that would be amiable to both gender and school's locations.
d. Teachers' training institutions – such colleges of education and universities of both state and federal institutions, should review their teachers' training curriculum to embed visual literacy in the curriculum of teacher training courses. A unit for ICT in educational technology should be opened to carter for this onerous task. By this, students could be trained on how to convert traditional text into digital-text formats for integration across curriculum to carter for pupils with related learning difficulties in a manner that reflects technology across the curriculum to prepare the teachers for inevitable paradigm shift from the old order

of teacher-talk-chalk-board delivery method to the new world order of emerging digital visual literacy skills to carter for pupils with reading difficulties.

e. Publishers of the primary schools reading text should start thinking of converting their books into multimodal digital-text. The publishers have options of converting their books inform of eReader- audio format only, or digital storytelling format such as in this study incorporating three digital elements (audio, video and subtitles) in one.

## 5.6 Limitations of the Study

The following are the limitations of this study. The study was restricted to Sokoto State of the state, and on public primary schools only. Secondly, the study employed non-control experimental design because of the outcome of the Whole Class Reading Screening Test, where 50% of the sampled population could not score 50 and above marks. The use of android and portable DVD player for the study is another limitation looking at their screen sizes; where one Digital Light Processing (DLP) portable android projector would be enough per class due to its wider projection capabilities. The study unfortunately was conducted during the raining season, consequent to which most pupils, particularly the boys came to school very late, and most of them would not return after the break. A more serious challenge to this study was that, the whole public primary schools in the state were closed for four weeks for Ramadan break (20th June -2nd July 2017). Owing to the pupils' behaviour of not resuming at the break's end, low participation of the pupils in the subsequent weeks was accordingly observed.

## 5.7 Suggestions for Further Studies

Owing to the limitations of this study, the following areas are suggested for further studies:

a. Impact of Short Film on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties.
b. Impact of Digital-Text on Interest, Reading Fluency and Comprehension of Pupils with reading difficulties, and
c. Impact of Digital Storytelling Strategies Across Curriculum of Pupils with reading difficulties.

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## APPENDIX A1

## WHOCREST-T (HAUSA)

**Name..... Sex..... Age.....**

**School.....LGA.....Date.....Time: 10 Min.**

***Umurni:*** *Ka hankaltu da misalin da ke cikin akwati, sannan ka karanta labarin da ke tafe. Sai ka zabi kalmar (✓) da tafi bada ma'ana daga cikin zerin haruffan* ***a*** *zuwa* ***c****.*

**Misali:** Wata rana namun daji suka taru suna …. ta ƙofar da ya kamata su riƙa fitowa 'yan Adam, don su kubuta daga tarkokinsu.

TAMBAYA: a. ***labara, b. shawarar, c. mamaki).*** Kalma mafi dacewa itace ***shawarar*** *don haka aka zabi* ***(b)***

Kowa (1) …. kawo tasa ana kushewa, sai dila ya ce, "Ba abin da ya fi, sai a yi makaranta a (2) .... dawa, mu da muka sha gwagwarmaya da mutane, muka gane, (3) … mu riƙa koya wa na (4) …. irin dabarummu." Sauran dabbobi suka yarda da wannan (5) …

Daga nan sai kura tace, "To, wa za a sa? Ai ka san wannan (6) … sai mu." Zaki ya ce, "to, gaya mana irin dabarun da ki kan yi (7) … kubuta daga mutane, sa'an nan mu gani in (8) … na da amfani ga sauran su bi."

Kura ta ce, "Ai ba wata dabara da ta ke (9) … ka da mutum, sai idan wuri ya (10) … maka ka buƈe haƙora ka tasam masa. In ko a kwai 'yar tazara, ka sanƙe ka yi ta kanka."

***(An de bo daga Magana Jarice, littafe na daya, p13).***

**TAMBAYOYI**

| | A | B | C |
|---|---|---|---|
| 1 | Ta | Na | su |
| 2 | Nan | Can | wurin |
| 3 | makamarsu | Mafitarsu | makircinsu |
| 4 | Baya | Gaba | tafe |
| 5 | Dabara | Mamaki | magana |
| 6 | Mulkin | Hakken | aiki |
| 7 | Su | Ki | mu |
| 8 | Tankokin ki | hanyoyinki | dangoginki |
| 9 | Hada | Raba | gama |
| 10 | Ƙure | Ture | muƙe |

**APPENDIX A2**

**WHOCREST-T (ENGLISH)**

Name..... Sex..... Age.....

School.....LGA.....Date.....Time: 10min

*Instruction: Carefully, read the example in the box. Then, read the following passage and tick ✓ the correct word that gives meaning to the passage, given the context of the sentence from options a-c.*

**Example:** In Australia, there is a wonderful **(a. history b. story c. adage)** about how began. **(a. history b. story c. adage).** The correct answer is (b).

. At first, the (1) … world was quiet and still. One day, Rainbow Snake woke and pushed up (2) … the ground. She travelled far and wide, (3) … long, deep marks on the land where she went. And that's how the valleys were made.

Rainbow Snake (4) …'Come out, frogs!' Slowly, the frogs came out from below the ground, with huge bellies full of water. Rainbow Snake tickled their bellies and when the frogs (5) … the water inside them came out. It filled the valleys and made the rivers and the (6) …. Everyone had enough to eat and all the birds and beasts were very (7) ….

But some animals began to make (8) ... They wanted more food. Rainbow Snake said, 'I will (9) …. those animals that behave well. They will become people, and they will live on the land forever. And those who make trouble, I will turn them into (10) ….

***(Culled from Nigeria Primary English pupils' Book Three, Longman Nigeria Plc. Abuja, Nigeria)***

QUESTIONS

| | A | B | C |
|---|---|---|---|
| 1 | Entire | massive | Real |
| 2 | Above | through | In |
| 3 | Leaving | digging | Writing |
| 4 | Called | shouted | Said |
| 5 | Cried | shouted | Laughed |
| 6 | Lakes | pools | Seas |
| 7 | Sad | hungry | Happy |
| 8 | Friendship | trouble | Fire |
| 9 | Reward | fight | Kill |
| 10 | Stones | houses | farms |

## APPENDIX B

## IRFACT TOOL TEACHER'S SCORESHEET

**Name..... Sex..... Age.....**

**School.....LGA.....Date.....Time:1Min**

**.**

***Instruction**: Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "*Stop*" and immediately mark the final word read with a bracket (]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an obstetric mark (*) in the box at the bottom and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was 13
customary to do so because they kept some stray domestic animal which might destroy 27
crops when planted close to homesteads. It was also believed that better fertile farmlands 41
were to be found in more distant locations from the village. So, all the natives obeyed this 58
law. 59

In Oma, the land belongs to the whole community. There was mutual respect and 73
love among all the members of the community. Any member of the community could farm 88
anywhere they liked, provided they did not put up permanent structure there. No one ever 103
thought of stealing from another person's farm in Oma community. The people had dignity 117
and honour. The farmlands were highly respected and revered. 126

The natives practiced shifting cultivation. They had developed an advanced way of 138
restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for 154
at least five years. People were forbidden to cut any tree from any piece of land that was 172
left to lie fallow because there was no shortage of farmland in Oma community. 186

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***(Culled from learn English Book three, UBE EDITION (2012).***

*Please check this box* ☐ *if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A)……. Number of errors (B)……. WCPM (C) = (A - B) …….

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): ……..... %

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98+% | |
| Instructional | 90 to 97% | |
| Frustration | < 90% | |

*Section B: Reading comprehension*

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma?
   ***Farming.***
2. Why the people of Oma had to go far to farm?
   ***Because they keep stray domestic animals.***
3. What was the believe of the people about better fertilize farmland?
   ***They believe that better fertilize farmland were to be found in distant locations.***
4. Who owned the land in Oma community?
   ***The land belongs to the whole community in Oma.***
5. Do Oma community love and respect one another?
   ***Yes, there was mutual respect and love among all the members of the community.***
6. What is the condition for cultivating a farmland in Oma community?
   ***The condition is not to place a permanent structure in the farm.***
7. Why was stealing not in the thoughts of the people of Oma?
   ***Because the farmlands were highly respected and revered.***
8. What kind of cultivation did the people practice?
   ***The people practiced shifting cultivation.***
9. How long did they allow the land to lie fallow?"
   ***They leave the land to lie fallow for five years.***
10. Why were people forbidden to cut even trees in land left to lie fallow?
    ***Because there was no shortage of land in Oma community.***

Comprehension scores: ……Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | |
|---|---|
| 80 – 100% | Excellent |
| 40 - 79% | Satisfactory |
| 0 – 39% | Unsatisfactory |

**APPENDIX C**
**IRFACT TOOL PUPIL'S COPY**

## TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they kept some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better fertile farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law.

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and revered.

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community.

## APPENDIX D
## PUPIL'S READING INTEREST QUESTIONNAIRE

### PUPIL'S READING INTEREST QUESTIONNAIRE OF PUPILS WITH READING DIFFICULTIES

**Instruction**: This instrument is to be administered by a research assistant other than the pupils' classroom teacher. The research assistant should read to the pupil that: The following statements tell how somebody feels about reading. Listen to each and decide whether the statement talks about a person who is like you or very different like you. The objective of the assessment is to measure your reading interest, thus there is no right or wrong answer.

**1 (one)** would be ticked if you accept that the statement is very different from you**, 2 (two)** if the statement is a little different from you**, 3 (three)** if the statement is a little like you, and (**four)** if the statement is a lot like you.

Pupil's Serial Number……Gender…… School ……

Pre-Test ◯ Post-Test ◯

| S/N | STATEMENTS | **1** | **2** | **3** | **4** |
|---|---|---|---|---|---|
| 1 | I am a good reader | | | | |
| 2 | I enjoy reading aloud to my brothers at home | | | | |
| 3 | I enjoy reading passages that are relevant to my culture | | | | |
| 4 | I enjoy passages that are appropriate to my level | | | | |
| 5 | I enjoy developing my reading fluency and comprehension skills more with mobile-digital devices than with chalk and board. | | | | |
| 6 | I have a reading partner for reading fluency and comprehension development | | | | |
| 7 | I like scoring my partner's reading fluency and comprehension with progress monitoring chart | | | | |
| 8 | It is always delighting to know my fluency and comprehension scores | | | | |
| 9 | It is delighting forming mental images when reading for comprehension | | | | |
| 10 | I feel delighted when my teacher asks to know my areas of reading difficulty | | | | |
| 11 | I like reading comprehension questions that make me think | | | | |
| 12 | I feel happy when I finish my reading assignment on schedule | | | | |
| 13 | I feel engaged doing out of class repeated reading activities with my friends | | | | |
| 14 | I enjoy Pair-reading-tutoring for reading fluency and comprehension development | | | | |
| 15 | Digital-texts of digital storytelling encourages me to take learning beyond school environment | | | | |

**APPENDIX E**
**PROGRESS MONITORING CHART**

Name: ……. Gender ……Age: …….

*Instruction: Write your score in the box under the reading date. Then put an **X** in one of the boxes to show your number of words read per minute*

| WRPM | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 130 | | | | | | | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | | | | | | | |
| 120 | | | | | | | | | | | | | | | | | | | | |
| 115 | | | | | | | | | | | | | | | | | | | | |
| 110 | | | | | | | | | | | | | | | | | | | | |
| 105 | | | | | | | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | | | | | | | |
| 95 | | | | | | | | | | | | | | | | | | | | |
| 90 | | | | | | | | | | | | | | | | | | | | |
| 85 | | | | | | | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | | | | | | | | |
| 55 | | | | | | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | | | | | |
| 35 | X | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 05 | | | | | | | | | | | | | | | | | | | | |
| **WRPM** | 35 | | | | | | | | | | | | | | | | | | | |
| **WCPM** | 30 | | | | | | | | | | | | | | | | | | | |
| **ERROS** | 5 | | | | | | | | | | | | | | | | | | | |
| **PASSAGE** | P1 | | | | | | | | | | | | | | | | | | | |
| **DATE** | ? | | | | | | | | | | | | | | | | | | | |
| **RC Scores** | 10 | | | | | | | | | | | | | | | | | | | |

**APPENDIX F1**
**DIGITAL STORYTELLING PASSAGE ONE**

THE BEST TREASURE

A certain farmer had three sons. He wanted them to become 11
good farmers. When the farmer was dying, he called his sons to him 24
and said, “Boys, I am about to leave you. I have hidden my wealth in 39
the vineyard. Search for it. It is all that I have to give you.” 53

His sons thought that their father had buried a treasure in the 65
vineyard. When the father was dead, they dug in the vineyard, looking 77
for the treasure, until they had dug everywhere. They didn’t find 89
hidden money, but they had cultivated the vines so well that they had 103
a fine crop of grapes. The best treasure is what we get from hard work. 118

READING COMPREHENSION QUESTIONS

1. How many sons had the farmer?
2. What did the farmer want his sons to become?
3. What did the farmer say to his sons when he was dying?
4. Where did the father say he had hidden his wealth?
5. What did the sons of the farmer think, he buried in the vineyard?
6. What did the boys do when the father was dead?
7. What were they looking for?
8. Did the sons of the farmer find any money in the vineyard?
9. What did the sons of the farmer have instead?
10. What is the lesson of the story?

**APPENDIX F2**
**DIGITAL STORYTELLING PASSAGE TWO**

ADAMU, THE HONEST BOY

Adamu found a thousand naira note outside his classroom one 10
afternoon. He was going to ease himself, when he saw the money. He 23
first thought it was a piece of paper. 31

Adamu told his playmates what he found. He gave the money to 43
Mrs. Fatima, his class mistress. Mrs. Fatima asked him how he found 56
it. Adamu told her everything. 60

The following morning, Mrs. Fatima announced that some 69
amount of money that was lost had been found. She said that those who 84
lost their money should say how much they lost and where they lost it. 96

Aliyu had lost his money. It was the money he was given to buy 110
some exercise books. Mrs. Fatima gave Aliyu the money and asked the 122
children to clap for Adamu. She told them to be honest always, like 135
Adamu. Adamu was happy. 139

READING COMPREHENSION QUESTIONS

1. What did Adamu find?
2. Where did Adamu find it?
3. Where was Adamu going when he found it?
4. Who did Adamu tell about what he found?
5. Who did Adamu give what he found to?
6. What did Mrs. Fatima announce?
7. Who was the owner of what was found?
8. Who did the children clap for?
9. Mrs. Fatima asked the children to always be honest like whom?
10. How did Adamu feel?

**APPENDIX F3**
**DIGITAL STORYTELLING PASSAGE THREE**

USMANU DANFODIYO

Usmanu Danfodiyo, was born at Degel village in Sokoto State in 1744. 12
When he was young, he studied Islam and later became a great scholar and 26
teacher. 27

Many Muslims came from different and far places to listen to his 39
teachings. He was teaching in line with the law of God as sent down in the 55
Holy Quran and the Sunnah of the Prophet Muhammad peace and blessings 67
of Allah be upon him. 72

In 1804, Shehu Usmanu waged a war against the pagans of the Gobir 85
empire. He defeated them and converted them to Islam. He later appointed 97
fourteen commanders to preach in different places. He gave to each 108
commander a flag. The commanders were to raise these flags on any 120
conquered city or town. 124

The fourteen flag-bearers later became the Emirs. Two of them were, 135
the emirs of Kano and Ilorin. In 1809, Shehu built a wall around Sokoto, and 151
became the first Sultan of Sokoto. He died in 1817. 163

READING COMPREHENSION QUESTIONS

1. Where was Shehu Usmanu Danfodiyo born?
2. When was Shehu Usmanu born?
3. What was Danfodiyo known to be?
4. The teachings of Danfodiyo were in line with what?
5. Who did he wage war against?
6. Who were the two famous flag-bearers of Usmanu Danfodiyo?
7. What did Danfodiyo do in 1809?
8. Which town did Danfodiyo make as his capital?
9. Who was the first Sultan of Sokoto?
10. When did Danfodiyo die?

**APPENDIX F4**
**DIGITAL STORYTELLING PASSAGE FOUR**

AUDU, THE HERDSMAN

Mallam Audu is a popular herdsman in Shagari village of 11
Sokoto State, of northern Nigeria. He is Fulbe by tribe. He owns 25
a herd of hundreds of bulls, cows and calves. 32

Mallam Audu always carries a long and strong stick. 42
Sometimes, he hits the animals with the stick to make them move 54
fast. 65

During the dry season, when the grass is dry, Mallam Audu 76
moves towards the South with his herd for fresh pasture. The 81
animals love fresh and green pasture. 94

We get beef from both cows and bulls, but we do not get 107
milk from bulls. Mallam Audu likes to drink fresh milk from the 120
cows as his breakfast early in the morning. 126

READING COMPREHENSION QUESTIONS.

1. Who is Mallam Audu?
2. Where is Shagari village?
3. Is Mallam Audu a Yoruba man?
4. How many cows does Mallam Audu own?
5. What does Mallam Audu always carry?
6. What does Mallam Audu do to make the animals move fast?
7. When does Mallam Audu move to the South?
8. Why does the herdsman move to the South?
9. Name two things we get from cows.
10. What is a group of cows, bulls and calves called?

**APPENDIX F5**
**DIGITAL STORYTELLING PASSAGE FIVE**

HUNTING

Danjuma and Hadiza are the children of Sarkin Daji Korau. They live in Tudun-Nomau village where men and women are farmers.

The children of the village have learnt to hunt rats and birds while the men and women work in the farm. Danjuma and Hadiza usually follow their parents to the farm. When they are not at the farm, Danjuma goes on rat-hunting, while Hadiza prepares the food for the family.

Danjuma knows how to set rat traps and often sets many traps around the farm. He brings many bush rats to the house every day and Hadiza prepares the family meals with them.

The villagers had only one source of water which is the big stream down the valley. They clear the path to it, so that everyone can get there easily. The women usually carry buckets of water on their heads.

READING COMPREHENSION QUESTIONS

1. Who are the children of Sarkin Daji Korau?
2. What is the name of Sarkin Daji Korau's village?
3. What do the children of the village learn to hunt?
4. Where do the villagers work?
5. When not in the farm, what do the children do?
6. What does Danjuma set around the farm?
7. What does Hadiza do for the family?
8. What is the source of water for the villagers?
9. Who clears the path to the stream?
10. Who usually carries water in the buckets?

**APPENDIX F6**
**DIGITAL STORYTELLING PASSAGE SIX**

TAYO'S HOLIDAY

Tayo lives with Mr. and Mrs. Ojo in Maiduguri. Mrs. Ojo is Tayo's sister. She 16
is also a teacher in Tayo's school. At the end of last term, Tayo travelled with her 33
sister to Osogbo in a train. The journey took them two days. Tayo enjoyed the long 49
journey because she saw so many interesting things and places. There were many 62
passengers in the train too. 66

They arrived Osogbo early in the morning. Tayo's parents and brothers were 78
waiting for them at the railway station. "Tayo, you have grown so big," Tayo's mother 93
observed. "Did you enjoy the journey?" she asked. "Yes, a lot," replied Tayo. "Funke, 107
how was the journey?" their mother asked Mrs. Ojo. "Fine, Mama," Mrs. Ojo replied. 120

They all went to their family home at Station Road. Tayo's friends were in their 135
family home to welcome her. She soon slept off because she was too tired to play 151
with her friends. In the evening, when Tayo woke up, she excitedly told the story of 167
the city of Maiduguri to her friends. "I can tell you that there are more trees planted 184
in Maiduguri than Osogbo. The people love to plant trees and all the roads are 208
beautifully lined with trees throughout the city." She said. "No, no," shouted one of 222
her friends, "we have a lot of bush here. We are in the rain forest". "Yes, but the trees 241
in Maiduguri were planted by the people. You did not plant your bush at Osogbo, you 257
see," Tayo said smiling. 261

READING COMPREHENSION QUESTIONS

1. Who does Tayo live with?
2. Where do they live?
3. Where did they travel to at the end of the term?
4. How long did the journey take them?
5. Why do you think Tayo enjoyed the journey?
6. When did they arrive Osogbo?
7. Who were waiting for them at the railway station?
8. Why did Tayo sleep off when her friends were with her?
9. What do the people of Maiduguri love?
10. What makes Maiduguri roads beautiful?

**APPENDIX F7**
**DIGITAL STORYTELLING PASSAGE SEVEN**

NATIONAL DAY CELEBRATION

Amina, Bayo and Ann are classmates. They have been looking forward to 12
the celebration of the National Day which is on October 1st. 23

The headmaster had announced to the pupils that the smartest and most 35
neatly dressed pupils in the school would be the ones to represent the school at 51
the stadium for the National Day Celebrations.

Before that day, Amina, Bayo and Ann had planned to appear in their best 57
that morning. It came through that the headmaster picked Amina, Bayo and Ann 71
with eighteen other pupils to participate in the march past. Two of the pupils were 84
given the green-white-green national flag of Nigeria. 99

Amina, Bayo and Ann led the march past of their school. The pupils 106
marched so well that their school was chosen as the best for that year. The 119
headmaster was very proud of the pupils as he mounted the stage to collect the 134
trophy for his school. Amina, Bayo, and Ann and other pupils jumped, shouted 149
and cried of joy as they danced back to their school with the trophy. 162

176

READING COMPREHENSION QUESTION

1. What were Amina, Bayo and Ann looking forward to?
2. What was the headmaster's announcement?
3. How did Amina, Bayo and Ann plan for that day?
4. How many pupils were selected for the march past?
5. Who led the march past of the school?
6. How did the pupils march?
7. Why was the headmaster proud?
8. What was the prize that the school won?
9. Who collected the trophy for the school?
10. How did the pupils show their joy?

**APPENDIX F8**

**DIGITAL STORYTELLING PASSAGE EIGHT**

A VISIT TO THE STADIUM

Aminu and his friend, Ike, were at the National Stadium last Saturday. 12
Nigeria was meeting Togo in a friendly football match. It was a very 25
interesting one. 27

The Nigerian team was better than the Togolese team. Nigeria won 38
with two goals to nothing. The first goal was scored by Godwin. It was 53
scored just after he was injured by a Togolese player.

The second goal was also scored by Godwin. Aminu and Ike loved 63
Godwin, just as they loved playing football. At the end of the match, both 74
Aminu and Ike were happy. Aminu said, "I shall become a great footballer 88
like Godwin, when I grow up." 101

At 7.00pm the same day, Ike was in his father's sitting room when 107
the match was shown on the television. He watched the match the second 121
time. 134

READING COMPREHENSION QUESTIONS

1. Who were at the National Stadium last Saturday?
2. Which team was Nigeria meeting in a football match?
3. Was Nigeria meeting Togo in world cup competition?
4. Which of the two teams was better?
5. Who won the match?
6. Who scored the goals for Nigeria?
7. Who said, "I shall become a great footballer like Godwin when I grow up"?
8. Where was Ike at 7.00pm?
9. Where was the match shown for the second time?
10. Did Aminu watch the match the second time?

**APPENDIX F9**

**DIGITAL STORYTELLING PASSAGE NINE**

AMINU KANO INTERNATIONAL AIRPORT

Ann and Benny went to Aminu Kano International Airport last week. They went with their father to see off their brother who was travelling to London. Ann and Benny had never been to an airport before.

As their car moved closer to the airport, they saw the hanger, which is a shed for aircraft. The children were excited when they saw an aeroplane resting like a big bird on the ground. They soon entered the airport building. Ann and Benny saw people and some beautiful pictures. Their brother waved at them as he joined the other passengers.

The aeroplane took off. Ann and Benny waved at the aircraft until it was lost to sight.

READING COMPREHENSION QUESTIONS

1. Where did Ann and Benny go to last week?
2. Who did they go with?
3. Why did they go to the airport?
4. Have they been to the airport before?
5. What did Ann and Benny saw as their car moved closer to the airport?
6. What excited the children in the airport?
7. What was an aeroplane like, on the ground?
8. Where did Ann and Benny see beautiful pictures?
9. Who waved at them as he joined the other passengers?
10. What did Ann and Benny do as the aeroplane took off?

**APPENDIX F10**
**DIGITAL STORYTELLING PASSAGE TEN**

RED CROSS SOCIETY

Tayo, Ben and Ike were members of the Red Cross Society in 13
their school. They liked following the school football team to places 24
where they play matches. 27

One day, the school team went to play against a nearby school. 39
The Red Cross members put on their uniform and carried their first aid 52
box. Inside the box were a pair of scissors, some bandages, cotton 65
wool, iodine and some balm.

When the match started, all the pupils were enjoying it. Suddenly, 69
a player called David, fell on the field. Tayo, Ben and Ike ran to help 79
him, with Tayo carrying the first aid box. 92

David had injured his ankle. The Red Cross members helped him 103
and he could play once more. 114

120

READING COMPREHENSION QUESTIONS

1. Who were the Red Cross members in their school?
2. Which team did they like to follow?
3. Did the Red Cross members wear uniform?
4. What did they carry to the football field?
5. What was inside the first aid box?
6. What were the pupils enjoying?
7. What happened to David in the field?
8. Who ran to help David?
9. Who was carrying the first aid box?
10. Was David able to play again?

**APPENDIX G1**
**TIME TABLE OF THE TREATMENT PROCEDURE**

This presents the weekly instructional activities of the study

TIME TABLE

| WEEKS | Pre-Test | P1 | P2 | P3 | P4 | P5 | Break | P6 | P7 | P8 | P9 | P10 | Post-Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st – 5th May | 8th - 12th May | 15th - 19th May | 22nd - 26th May | 29th May – 2nd June | 5th – 9th June | Ramadan/Break 10th June – 2nd July | 3rd-7th July | 10th-14th July | 17th-21st July | 24th – 28th July | 31st - 4th August | 7th -11th August |
| Mon | Any day of the week | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | Any day of the week |
| Tues | | 2 & 3 | 2 & 3 | 2 & 3 | 2 & 3 | 2 & 3 | | 2 &3 | 2 & 3 | 2 & 3 | 2 & 3 | 2 & 3 | |
| Wed | | 4 & 3 | 4 & 3 | 4 & 3 | 4 & 3 | 4 & 3 | | 4 &3 | 4 & 3 | 4 & 3 | 4 & 3 | 4 & 3 | |
| Thurs | | 5 & 3 | 5 & 3 | 5 & 3 | 5 & 3 | 5 & 3 | | 5 &3 | 5 & 3 | 5 & 3 | 5 & 3 | 5 & 3 | |
| Fri | | 6 | 6 | 6 | 6 | 6 | | 6 | 6 | 6 | 6 | 6 | |

KEY TO THE FIGURES

1. Weekly ORF & Reading Comprehension baseline assessment
2. Repeated reading aloud with teacher & MP3 audio clip
3. Mental Imagery for Reading comprehension
4. Partner Oral Repeated Reading
5. Repeated Oral Reading modelling
6. Revision & end of the week ORF & Reading comprehension assessment

**APPENDIX G2**
**TREATMENT PROCEDURE**

Introduction

U. G Third Person Approach for Content-Based Digital Storytelling Strategy in Table 2.8 was used as a model for creating the Content-based Digital Storytelling Strategy.

| Day | Activities | Materials | Steps | Objectives |
|---|---|---|---|---|
| Mon | 1. Pairing the pupils<br>2. Weekly ORF baseline assessment | 1. Passage of the week<br>2. PMC<br>3. Stopwatch | 1. The pupils need to be fully oriented about the programme from the inception even before they are paired.<br>2. To pair the pupils, make a list of all the pupils in the class<br>3. Divide the list in half and pair the pupils correspondingly<br>4. Take individual ORF rate of the pupils<br>5. Then read the passage with the pupils<br>6. Solve the reading comprehension questions, and<br>7. Based on pupil's baseline assessment result, encourage them to set weekly fluency goals for example, one pupils goal may be to read 50 words per minute with fewer than 5 mistakes depending on the reading proficiency of the pupil<br>8. ask the pupils their areas of difficulties if any | 1. to establish individual pupil's ORF rate<br>2. to influence pupils' interest in reading fluency with comprehension<br>3. and to encourage out of school activities |

| | | | | |
|---|---|---|---|---|
| Tue | 1. Repeated reading aloud with teacher and MP3 audio clip<br>2. Mental Imagery for Reading comprehension | 1. Passage of the week<br>2. PMC<br>3. Audio text of the passage in Mp3 format<br>4. Mobile device/phone<br>5. Stopwatch | 1. before reading the passage of the day. The instructor should introduce the story in the passage, then read the story while the pupils follow along<br>2. during the reading allow pupils to read the passage aloud softly along with the Mp3 as a model for reading fluency and comprehension.<br>3. this continues until the pupils feel they could read the passage and answer the reading comprehension questions independently without the digital player<br>4. tell the pupils that Mental Imagery Strategy could improve their text recall by making pictures in their mind of what they are reading.<br>5. read a paragraph of the passage, pause to tell the class what mental image come to your mind<br>6. read another part aloud from the passage and ask the pupils to relate what comes to their mind<br>7. after these reading activities, teacher should teach the pupils how to record their reading on the PMC in pair.<br>8. announce the number of words each pupil read after subtracting the number of errors made.<br>9. before dismissing the class<br>10. ask pupils to take their reading rate in pair<br>11. and encourage them to do the same at least three times at home<br>12. ask the pupils their areas of difficulties if any | 1. build pupils' interest in reading fluency and comprehension<br>2. build pupil's ORF rate with comprehension<br>3. encourage pair tutoring<br>4. encourage pairs to record their PMC<br>5. and to encourage out of school activities |

| | | | | |
|---|---|---|---|---|
| Wed. | 1. Partner Oral Repeated Reading<br>2. Mental Imagery for Reading comprehension | 1. Passage of the week<br>2. PMC<br>3. MP3<br>4. Mobile phone<br>5. Stopwatch | 1. pairs should sit in a quiet place. Begin reading aloud with the pupil<br>2. if the pupil misread a word, point it and pronounce it correctly<br>3. praise the pupil occasionally as he is putting his effort to read correctly<br>4. encourage the peers to record their reading fluency on the PMC<br>5. tell the pupils that mental Imagery Strategy could improve their text recall by<br>6. making pictures in their mind of what they are reading.<br>7. read a paragraph of the passage, pause to tell the class what mental image come to your mind<br>8. read another part aloud from the passage and ask the pupils to relate what comes to their mind<br>9. ask the pupils their areas of difficulties if any | 1. build pupils' interest in reading fluency and comprehension<br>2. encourage pair tutoring<br>3. take learning beyond class environment |
| Thurs | 1. Repeated Oral Reading modelling<br>2. Mental Imagery for Reading comprehension | 1. Passage of the week<br>2. PMC<br>3. Audio text of the passage in Mp3 format<br>4. Mobile phone/device<br>5. Stopwatch<br>6. Video text of the passage in MP4/3gpp format | 1. before reading the passage of the day. The instructor should introduce the story in the passage, then read the story while the pupils follow along<br>2. during the reading allow pupils to read the passage aloud softly along with the Mp3 as a model for reading fluency and comprehension.<br>3. this continues until the pupils feel they could read the passage and answer the reading comprehension questions independently without the digital player<br>4. tell the pupils that mental Imagery Strategy could improve their text recall by making pictures in their mind of what they are reading.<br>5. read a paragraph of the passage, pause to tell the class what mental image come to your mind<br>6. read another part aloud from the passage and ask the pupils to relate what comes to their mind<br>7. watch the video with the pupils and reflect on what clues it gives about the meaning of the passage<br>8. stop at certain point and ask the pupils to give their interpretation of the video with regards the passage<br>9. ask the pupils their areas of difficulties if any | 1. build pupils' interest in reading fluency and comprehension<br>2. encourage pair tutoring<br>3. take learning beyond class environment<br>4. To build the reading comprehension skills of the pupils |

| | | | | |
|---|---|---|---|---|
| Fri | 1. Revision and end of the week ORF and<br>2. Reading comprehension assessment | 1. Passage of the week<br>2. PMC<br>3. Audio text of the passage in Mp3 format<br>4. Mobile phone/device<br>5. Stopwatch<br>6. Video text of the passage in MP4/3gpp format | 1. the teacher should revise the week's activities<br>2. ask the pupils their areas of difficulties if any, then<br>3. individual pupil's ORF and reading comprehension is taken per pair using the PMC | 1. To monitor the progress of the pupils based on the one-week activities<br>2. Encourage pair tutoring and out of class activities<br>3. build pupils' interest in reading fluency and comprehension<br>4. take learning beyond class environment |

***This weekly treatment procedure would be used throughout the number of weeks of the experimentation.***

## APPENDIX H
## RESULTS OF WHOLE-CLASS READING SCREENING TEST

**Summary of Whole-Class Reading Screening Test Scores**

| **Hausa Lang. Screening Test** | | | **English Lang. Screening Test** | | |
|---|---|---|---|---|---|
| Score | Frequency | Percent | Score | Frequency | Percent |
| 0 | 33 | 35.1 | 0 | 50 | 53.2 |
| 10 | 9 | 9.6 | 10 | 11 | 11.7 |
| 20 | 27 | 28.7 | 20 | 14 | 14.9 |
| 30 | 16 | 17.0 | 30 | 17 | 18.1 |
| 40 | 9 | 9.6 | 40 | 2 | 2.1 |
| **Total** | **94** | **100** | **Total** | **94** | **100** |

Appendix I reveals that 33 (35.1%) pupils scored 0 in Hausa, and 50 (53.2%) scored 0 in English. Only 9 (9.6%) pupils out of 94 scored 40 marks in Hausa, with only 2 (2.1%) pupils scoring 40 marks in English. The implication of these results is that, going by the recommendation of Hasbrouck and Tilda (2006), all the participants of this exercise require reading fluency and comprehension intervention. Hence, the study employed none control pre-test, post-test quasi-experimental design to accommodate the participants.

## APPENDIX I
## WEEKLY FORMATIVE ASSESSMENT

This section presents the weekly oral reading fluency and comprehension formative assessment of pupils measured using Progress Monitoring Chart (PMC) of the individual participant. The PMC, is a feedback instrument designed to measures pupils' on-going weekly reading fluency and comprehension progress. It was also intended to inform the effectiveness of the treatment and to predict those who may graduate to Junior secondary school with reading difficulty when confronted with an advanced reading tasks. Weekly ORF and RC rates of each participant were taken before and after each passage was treated to inform the gains of the week's activities. A summary of the Pre-test and Post-tests scores of Oral reading fluency according to gender is presented blow.

**Pre-and-Post-Tests of ORF Formative Scores by Gender**

| Wk. | Sex | Pre- Test | | | | | Total | Post-Test | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Ins | In | MD | S | | F | Ins | In | MD | S | |
| Wk. 1 | B | 20 | 8 | - | - | 20 | **48** | 33 | 12 | 1 | - | 2 | **48** |
| | G | 18 | 3 | - | - | 25 | **46** | 28 | 13 | - | - | 5 | **46** |
| Wk. 2 | B | 37 | 5 | - | - | 6 | **48** | 33 | 6 | 5 | - | 4 | **48** |
| | G | 24 | 4 | - | - | 18 | **46** | 31 | 8 | - | - | 7 | **46** |
| Wk. 3 | B | 39 | 5 | - | - | 4 | **48** | 25 | 13 | 2 | - | 8 | **48** |
| | G | 26 | 2 | - | - | 18 | **46** | 28 | 13 | - | - | 5 | **46** |
| Wk4 | B | 27 | 7 | - | - | 14 | **48** | 25 | 9 | 2 | - | 12 | **48** |
| | G | 10 | 10 | 1 | - | 25 | **46** | 21 | 10 | - | - | 15 | **46** |
| Wk. 5 | B | 24 | 7 | 2 | - | 15 | **48** | 16 | 3 | - | 29 | - | **48** |
| | G | 6 | 6 | 1 | - | 33 | **46** | 12 | 2 | - | 33 | - | **46** |
| Wk. 6 | B | 19 | 5 | 2 | 22 | - | **48** | 20 | 6 | 3 | 19 | - | **48** |
| | G | 15 | 5 | - | 26 | - | **46** | 15 | 9 | - | 22 | - | **46** |
| Wk. 7 | B | 14 | 9 | 1 | 24 | - | **48** | 19 | 9 | 1 | 19 | - | **48** |
| | G | 15 | 9 | - | 22 | - | **46** | 16 | 6 | 5 | 19 | - | **46** |
| Wk. 8 | B | 12 | 10 | 1 | 25 | - | **48** | 18 | 9 | 2 | 19 | - | **48** |
| | G | 13 | 11 | - | 22 | - | **46** | 11 | 14 | 1 | 20 | - | **46** |
| Wk. 9 | B | 15 | 7 | 3 | 23 | - | **48** | 16 | 9 | 4 | 19 | - | **48** |
| | G | 12 | 10 | 2 | 22 | - | **46** | 12 | 11 | 4 | 19 | - | **46** |
| Wk. 10 | B | 13 | 8 | 4 | - | 23 | **48** | 16 | 7 | 5 | - | 20 | **48** |
| | G | 12 | 7 | 4 | - | 23 | **48** | 10 | 5 | 10 | - | 21 | **46** |

This Appendix shows that, in oral reading fluency pre-test exercise of the first week, 45 pupils were stopped across the genders, 38 pupils were reading at frustration level, and 11 pupils were found reading at instructional level. At the post-test, most of the pupils

stopped at the pre-test scaled to frustration level. The pre-test of the last week shows that, 27 pupils were at frustration level, 17 at instructional level, five at independent level, and 45 were stopped. Finally, the post-test of the last week informs that, 40 pupils were stopped and 26 were reading at frustration level. Compared to the entry level of the pupils in week 1, considerable changes in the reading fluency of the pupils were recorded. A summary of the pre-and post-test scores of pupils' weekly formative assessment in Oral reading fluency by school's locations is shown below.

**Pre-and-Post-Test of Orff Formative Scores by Locations**

| Wk. | L | Pre-Test Scores | | | | | | Post-Test Scores | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Ins | In | MD | S | T | F | Ins | In | MD | S | T |
| Wk. 1 | R | 12 | - | - | - | 35 | **47** | 43 | 1 | - | - | 3 | **47** |
| | U | 26 | 11 | - | - | 10 | **47** | 18 | 24 | 1 | - | 4 | **47** |
| Wk. 2 | R | 31 | - | - | - | 16 | **47** | 37 | 1 | - | 7 | 2 | **47** |
| | U | 30 | - | - | - | 8 | **47** | 27 | 13 | - | 4 | 3 | **47** |
| Wk. 3 | R | 31 | 1 | - | - | 15 | **47** | 37 | 2 | - | - | 8 | **47** |
| | U | 34 | 6 | - | - | 7 | **47** | 16 | 24 | 2 | 5 | - | **47** |
| Wk4 | R | 21 | 1 | - | - | 25 | **47** | 35 | 2 | - | - | 10 | **47** |
| | U | 16 | 16 | 1 | - | 14 | **47** | 11 | 17 | 2 | - | 17 | **47** |
| Wk. 5 | R | 19 | 1 | - | - | 27 | **47** | 17 | 1 | - | 10 | 19 | **47** |
| | U | 11 | 12 | 3 | - | 21 | **47** | 10 | 4 | - | 16 | 17 | **47** |
| Wk. 6 | R | 16 | - | 0 | 31 | - | **47** | 20 | - | 1 | - | 26 | **47** |
| | U | 18 | 12 | 2 | 17 | - | **47** | 15 | 15 | 2 | - | 15 | **47** |
| Wk. 7 | R | 14 | 1 | - | 32 | - | **47** | 20 | 1 | - | - | 26 | **47** |
| | U | 15 | 17 | 1 | 14 | - | **47** | 15 | 14 | 6 | - | 12 | **47** |
| Wk. 8 | R | 13 | 2 | - | - | 32 | **47** | 20 | 1 | - | - | 26 | **47** |
| | U | 12 | 19 | 1 | 1 | 14 | **47** | 9 | 22 | 3 | 1 | 12 | **47** |
| Wk. 9 | R | 14 | 1 | - | - | 32 | **47** | 18 | 3 | - | - | 26 | **47** |
| | U | 13 | 16 | 5 | 1 | 14 | **47** | 16 | 17 | 8 | 1 | 5 | **47** |
| Wk. 10 | R | 12 | 3 | - | - | 32 | **47** | 19 | 2 | 1 | - | 25 | **47** |
| | U | 13 | 12 | 8 | 1 | 13 | **47** | 7 | 10 | 14 | 1 | 15 | **47** |

This Appendix indicates that, in the first week, 45 pupils were stopped, and 38 pupils were reported to be reading the passage at frustration level. At the end of the first week's formative assessment, 61 pupils were reported to be at frustration level, and 25 at instructional level. Finally, the pre-test of the last week shows that, 25 pupils were at frustration level, 15 at instructional level, and 45 were stopped. The post-test of the week in forms that, 40 pupils were stopped and 26 were reading at frustration level. Compared to the scores of the first week, considerable gains in the reading fluency of the pupils were

recorded. A summary of the pre-and-post-tests scores of pupils' weekly assessment in reading comprehension according to gender.

**PRE-AND-POST-TESTS COMPREHENSION FORMATIVE SCORES BY GENDER**

| Wk. | Sex | Pre-Test Scores | | | | | | Post-Test Scores | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | U | S | E | MD | S | T | U | S | E | MD | S | T |
| Wk. 1 | B | 25 | 1 | - | - | 22 | **48** | 34 | 10 | - | - | 4 | **48** |
| | G | 17 | 1 | - | 5 | 23 | **46** | 36 | 6 | - | - | 4 | **46** |
| Wk. 2 | B | 38 | 4 | - | - | 6 | **48** | 31 | 8 | 3 | - | 6 | **48** |
| | G | 23 | 2 | - | 3 | 18 | **46** | 29 | 9 | - | - | 8 | **46** |
| Wk. 3 | B | 20 | - | - | - | 8 | **48** | 31 | 4 | 4 | - | 9 | **48** |
| | G | 31 | 1 | - | - | 14 | **46** | 31 | 9 | - | - | 6 | **46** |
| Wk4 | B | 31 | 4 | - | - | 13 | **48** | 27 | 5 | 1 | - | 15 | **48** |
| | G | 21 | 3 | - | - | 22 | **46** | 26 | 2 | 3 | - | 15 | **46** |
| Wk. 5 | B | 30 | 1 | - | 10 | 7 | **48** | 22 | 1 | - | 12 | 13 | **48** |
| | G | 14 | - | - | 20 | 10 | **46** | 11 | 1 | - | 18 | 16 | **46** |
| Wk. 6 | B | 22 | 3 | - | 23 | - | **48** | 29 | 2 | - | 17 | - | **48** |
| | G | 21 | - | - | 26 | - | **46** | 24 | 3 | - | 19 | - | **46** |
| Wk. 7 | B | 22 | 4 | - | 1 | 21 | **48** | 26 | 4 | 1 | 10 | 7 | **48** |
| | G | 23 | 2 | - | 1 | 20 | **46** | 20 | 6 | - | 10 | 7 | **46** |
| Wk. 8 | B | 18 | 7 | - | 2 | 21 | **48** | 26 | 5 | 1 | - | 16 | **48** |
| | G | 18 | 5 | 2 | 1 | 20 | **46** | 18 | 7 | 2 | 2 | 17 | **46** |
| Wk. 9 | B | 21 | 6 | - | 2 | 19 | **48** | 23 | 4 | 5 | - | 16 | **48** |
| | G | 19 | 5 | 1 | 1 | 20 | **46** | 18 | 6 | 5 | 2 | 15 | **46** |
| Wk. 10 | B | 18 | 7 | 1 | - | 22 | **48** | 19 | 4 | 5 | - | 20 | **48** |
| | G | 18 | 4 | 2 | - | 22 | **46** | 15 | 7 | 6 | 2 | 16 | **46** |

This Appendix informs that, at the first week of the exercise, 45 pupils across the genders were stopped, 42 scored unsatisfactory marks, 2 pupils scored satisfactory mark and the scores of 5 pupils were found missing. At the last week post-test result shows that, 36 pupils were stopped and 34 were at frustration level. Compared to the pupils' entry behaviour at the beginning of the week, it could be said the week's activities on reading fluency and comprehension via digital storytelling have yielded a positive result. A summary of the pre-and-post-test pupils' reading comprehension by location is presented below.

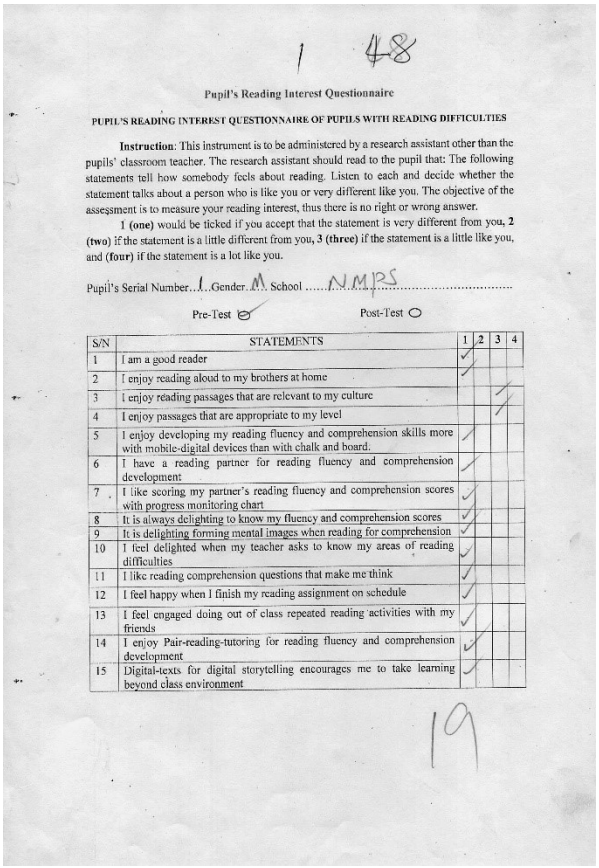
**PRE-AND-POST-TESTS OF COMPREHENSION FORMATIVE SCORES BY LOCATION**

| Wk. | Sex | Pre-Test Scores | | | | | | Post-Test Scores | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | U | S | E | MD | S | T | U | S | E | MD | S | T |
| Wk. 1 | R | 10 | - | - | - | 37 | **47** | 43 | - | - | - | 4 | **47** |
| | U | 32 | 2 | - | 5 | 08 | **47** | 26 | 16 | - | - | 5 | **47** |
| Wk. 2 | R | 30 | - | - | - | 17 | **47** | 41 | - | - | - | 6 | **47** |
| | U | 31 | 4 | - | - | 12 | **47** | 19 | 17 | 3 | 8 | - | **47** |
| Wk. 3 | R | 31 | - | - | - | 16 | **47** | 37 | - | - | - | 10 | **47** |
| | U | 40 | 1 | - | 6 | - | **47** | 25 | 13 | 4 | 5 | - | **47** |
| Wk4 | R | 20 | - | - | - | 27 | **47** | 36 | - | - | - | 11 | **47** |
| | U | 12 | 7 | - | - | 8 | **47** | 19 | 7 | 4 | 7 | 10 | **47** |
| Wk. 5 | R | 19 | - | - | - | 28 | **47** | 25 | - | - | 11 | 11 | **47** |
| | U | 25 | 1 | - | 1 | 20 | **47** | 8 | 2 | - | 27 | 10 | **47** |
| Wk. 6 | R | 16 | - | - | - | 21 | **47** | 24 | - | - | - | 23 | **47** |
| | U | 26 | 4 | - | - | 17 | **47** | 29 | 5 | - | - | 13 | **47** |
| Wk. 7 | R | 16 | - | - | - | 31 | **47** | 24 | - | - | - | 23 | **47** |
| | U | 29 | 6 | - | - | 12 | **47** | 22 | 13 | 1 | - | 11 | **47** |
| Wk. 8 | R | 16 | - | - | - | 31 | **47** | 24 | - | - | - | 23 | **47** |
| | U | 20 | 12 | 2 | 13 | - | **47** | 21 | 12 | 3 | - | 11 | **47** |
| Wk. 9 | R | 16 | - | - | - | 31 | **47** | 24 | - | - | - | 23 | **47** |
| | U | 24 | 9 | 3 | 11 | - | **47** | 17 | 10 | 10 | - | 10 | **47** |
| Wk. 10 | R | 16 | - | - | - | 31 | **47** | 24 | - | - | - | 23 | **47** |
| | U | 20 | 11 | 3 | 11 | 2 | **47** | 10 | 11 | 11 | 5 | 10 | **47** |

This Appendix indicates that, 45 pupils were stopped, and 42 scored unsatisfactory scores of between 0-39, with only two pupils scoring satisfactory scores between 40-79 marks. The post-test of the last week reports that, 34 scored unsatisfactory marks of 0-39 marks and 33 pupils were stopped. Compared to the entry level of the pupils recorded in week one, this informs formative assessments of the Digital Storytelling Strategies activities on reading fluency and comprehension of Pupils with reading difficulties has yielded a result. In the final note, this exercise predicts that over 70% of the pupils from both gender and location would eventually graduate to Junior secondary school with reading difficulty.

# APPENDIX J1

# BOY'S MARKED SCRIPTS ON READING INTEREST FROM URBAN SCHOOL



1 48

Pupil's Reading Interest Questionnaire

PUPIL'S READING INTEREST QUESTIONNAIRE OF PUPILS WITH READING DIFFICULTIES

**Instruction**: This instrument is to be administered by a research assistant other than the pupils' classroom teacher. The research assistant should read to the pupil that: The following statements tell how somebody feels about reading. Listen to each and decide whether the statement talks about a person who is like you or very different like you. The objective of the assessment is to measure your reading interest, thus there is no right or wrong answer.

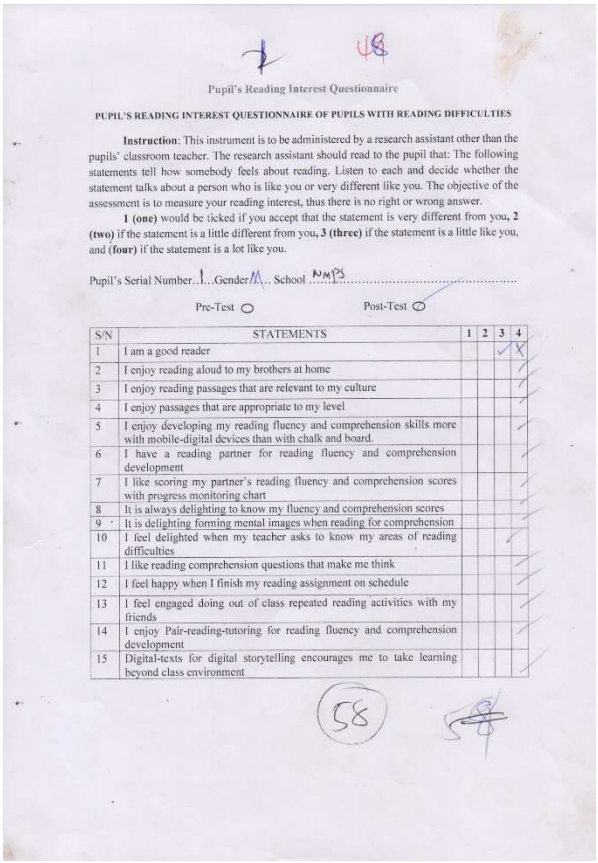
**1 (one)** would be ticked if you accept that the statement is very different from you, **2 (two)** if the statement is a little different from you, **3 (three)** if the statement is a little like you, and **(four)** if the statement is a lot like you.

Pupil's Serial Number...1...Gender...M... School ...NMPS...

Pre-Test ✓ Post-Test ○

| S/N | STATEMENTS | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1 | I am a good reader | ✓ | | | |
| 2 | I enjoy reading aloud to my brothers at home | ✓ | | | |
| 3 | I enjoy reading passages that are relevant to my culture | | | | ✓ |
| 4 | I enjoy passages that are appropriate to my level | | | | ✓ |
| 5 | I enjoy developing my reading fluency and comprehension skills more with mobile-digital devices than with chalk and board. | ✓ | | | |
| 6 | I have a reading partner for reading fluency and comprehension development | ✓ | | | |
| 7 | I like scoring my partner's reading fluency and comprehension scores with progress monitoring chart | ✓ | | | |
| 8 | It is always delighting to know my fluency and comprehension scores | ✓ | | | |
| 9 | It is delighting forming mental images when reading for comprehension | ✓ | | | |
| 10 | I feel delighted when my teacher asks to know my areas of reading difficulties | ✓ | | | |
| 11 | I like reading comprehension questions that make me think | ✓ | | | |
| 12 | I feel happy when I finish my reading assignment on schedule | ✓ | | | |
| 13 | I feel engaged doing out of class repeated reading activities with my friends | ✓ | | | |
| 14 | I enjoy Pair-reading-tutoring for reading fluency and comprehension development | ✓ | | | |
| 15 | Digital-texts for digital storytelling encourages me to take learning beyond class environment | ✓ | | | |

19



Pupil's Reading Interest Questionnaire

PUPIL'S READING INTEREST QUESTIONNAIRE OF PUPILS WITH READING DIFFICULTIES

**Instruction**: This instrument is to be administered by a research assistant other than the pupils' classroom teacher. The research assistant should read to the pupil that: The following statements tell how somebody feels about reading. Listen to each and decide whether the statement talks about a person who is like you or very different like you. The objective of the assessment is to measure your reading interest, thus there is no right or wrong answer.

**1 (one)** would be ticked if you accept that the statement is very different from you, **2 (two)** if the statement is a little different from you, **3 (three)** if the statement is a little like you, and **(four)** if the statement is a lot like you.

Pupil's Serial Number...1...Gender...M... School ...NMPS...

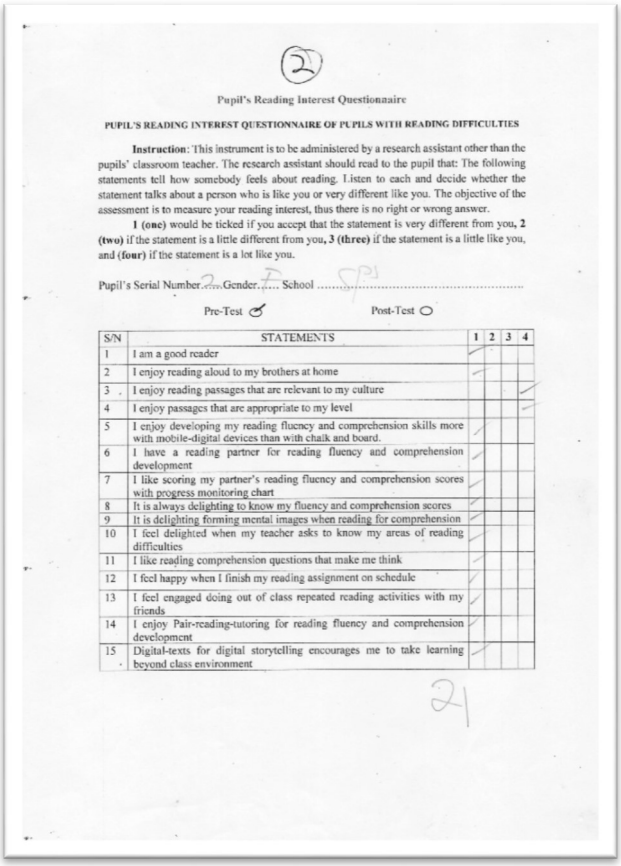
Pre-Test ○ Post-Test ✓

| S/N | STATEMENTS | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1 | I am a good reader | | | ✓ | X |
| 2 | I enjoy reading aloud to my brothers at home | | | | ✓ |
| 3 | I enjoy reading passages that are relevant to my culture | | | | ✓ |
| 4 | I enjoy passages that are appropriate to my level | | | | ✓ |
| 5 | I enjoy developing my reading fluency and comprehension skills more with mobile-digital devices than with chalk and board. | | | | ✓ |
| 6 | I have a reading partner for reading fluency and comprehension development | | | | ✓ |
| 7 | I like scoring my partner's reading fluency and comprehension scores with progress monitoring chart | | | | ✓ |
| 8 | It is always delighting to know my fluency and comprehension scores | | | | ✓ |
| 9 | It is delighting forming mental images when reading for comprehension | | | | ✓ |
| 10 | I feel delighted when my teacher asks to know my areas of reading difficulties | | | | ✓ |
| 11 | I like reading comprehension questions that make me think | | | | ✓ |
| 12 | I feel happy when I finish my reading assignment on schedule | | | | ✓ |
| 13 | I feel engaged doing out of class repeated reading activities with my friends | | | | ✓ |
| 14 | I enjoy Pair-reading-tutoring for reading fluency and comprehension development | | | | ✓ |
| 15 | Digital-texts for digital storytelling encourages me to take learning beyond class environment | | | | ✓ |

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# APPENDIX J2

# GIRL'S MARKED SCRIPTS ON READING INTEREST FROM RURAL SCHOOL



(2)

Pupil's Reading Interest Questionnaire

PUPIL'S READING INTEREST QUESTIONNAIRE OF PUPILS WITH READING DIFFICULTIES

**Instruction**: This instrument is to be administered by a research assistant other than the pupils' classroom teacher. The research assistant should read to the pupil that: The following statements tell how somebody feels about reading. Listen to each and decide whether the statement talks about a person who is like you or very different like you. The objective of the assessment is to measure your reading interest, thus there is no right or wrong answer.

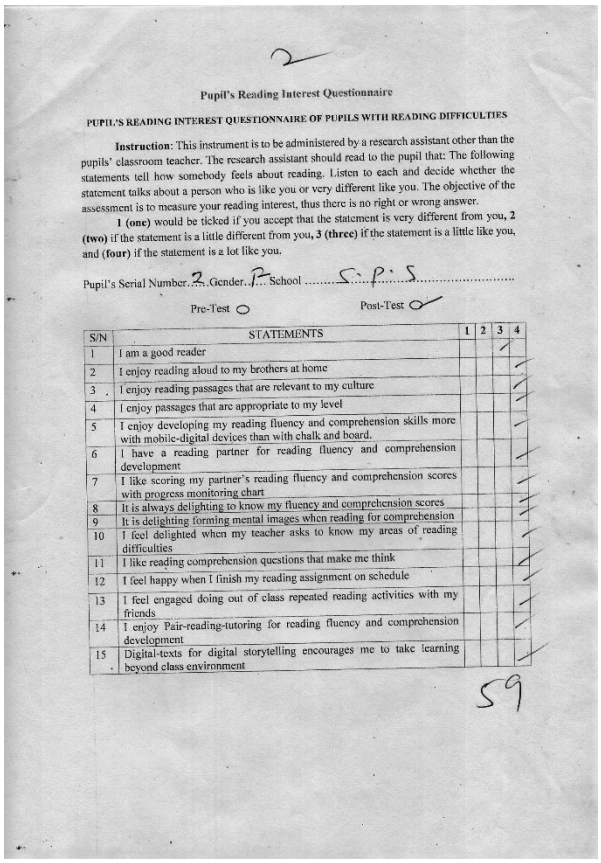
**1 (one)** would be ticked if you accept that the statement is very different from you, **2 (two)** if the statement is a little different from you, **3 (three)** if the statement is a little like you, and **(four)** if the statement is a lot like you.

Pupil's Serial Number 2 Gender F School SP1

Pre-Test ✓ Post-Test ○

| S/N | STATEMENTS | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1 | I am a good reader | | | | ✓ |
| 2 | I enjoy reading aloud to my brothers at home | | | | ✓ |
| 3 | I enjoy reading passages that are relevant to my culture | | | | ✓ |
| 4 | I enjoy passages that are appropriate to my level | | | | ✓ |
| 5 | I enjoy developing my reading fluency and comprehension skills more with mobile-digital devices than with chalk and board. | | | | ✓ |
| 6 | I have a reading partner for reading fluency and comprehension development | | | | ✓ |
| 7 | I like scoring my partner's reading fluency and comprehension scores with progress monitoring chart | | | | ✓ |
| 8 | It is always delighting to know my fluency and comprehension scores | | | | ✓ |
| 9 | It is delighting forming mental images when reading for comprehension | | | | ✓ |
| 10 | I feel delighted when my teacher asks to know my areas of reading difficulties | | | | ✓ |
| 11 | I like reading comprehension questions that make me think | | | | ✓ |
| 12 | I feel happy when I finish my reading assignment on schedule | | | | ✓ |
| 13 | I feel engaged doing out of class repeated reading activities with my friends | | | | ✓ |
| 14 | I enjoy Pair-reading-tutoring for reading fluency and comprehension development | | | | ✓ |
| 15 | Digital-texts for digital storytelling encourages me to take learning beyond class environment | | | | ✓ |

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2

Pupil's Reading Interest Questionnaire

PUPIL'S READING INTEREST QUESTIONNAIRE OF PUPILS WITH READING DIFFICULTIES

**Instruction**: This instrument is to be administered by a research assistant other than the pupils' classroom teacher. The research assistant should read to the pupil that: The following statements tell how somebody feels about reading. Listen to each and decide whether the statement talks about a person who is like you or very different like you. The objective of the assessment is to measure your reading interest, thus there is no right or wrong answer.

**1 (one)** would be ticked if you accept that the statement is very different from you, **2 (two)** if the statement is a little different from you, **3 (three)** if the statement is a little like you, and **(four)** if the statement is a lot like you.

Pupil's Serial Number 2 Gender F School S.P.S

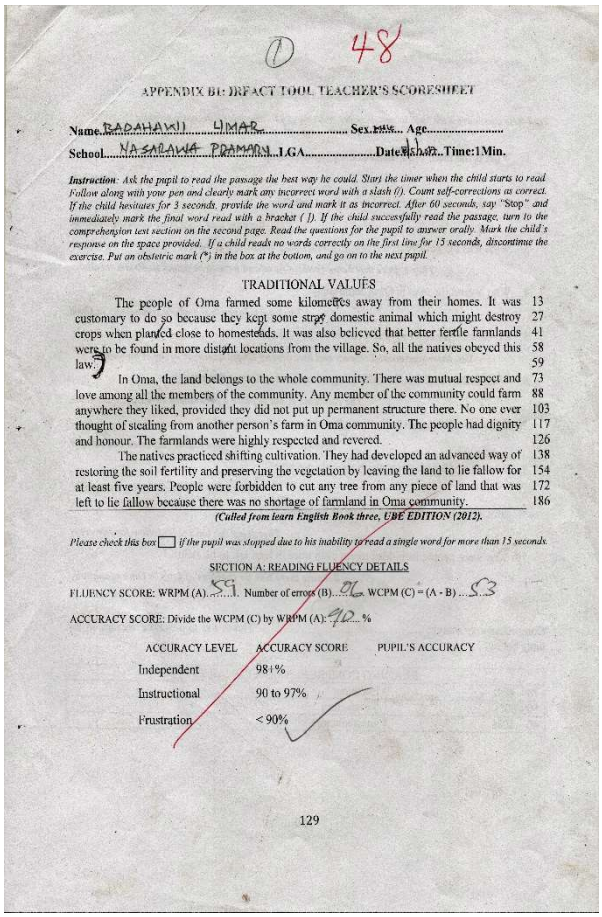
Pre-Test ○ Post-Test ✓

| S/N | STATEMENTS | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 1 | I am a good reader | | | ✓ | |
| 2 | I enjoy reading aloud to my brothers at home | | | | ✓ |
| 3 | I enjoy reading passages that are relevant to my culture | | | | ✓ |
| 4 | I enjoy passages that are appropriate to my level | | | | ✓ |
| 5 | I enjoy developing my reading fluency and comprehension skills more with mobile-digital devices than with chalk and board. | | | | ✓ |
| 6 | I have a reading partner for reading fluency and comprehension development | | | | ✓ |
| 7 | I like scoring my partner's reading fluency and comprehension scores with progress monitoring chart | | | | ✓ |
| 8 | It is always delighting to know my fluency and comprehension scores | | | | ✓ |
| 9 | It is delighting forming mental images when reading for comprehension | | | | ✓ |
| 10 | I feel delighted when my teacher asks to know my areas of reading difficulties | | | | ✓ |
| 11 | I like reading comprehension questions that make me think | | | | ✓ |
| 12 | I feel happy when I finish my reading assignment on schedule | | | | ✓ |
| 13 | I feel engaged doing out of class repeated reading activities with my friends | | | | ✓ |
| 14 | I enjoy Pair-reading-tutoring for reading fluency and comprehension development | | | | ✓ |
| 15 | Digital-texts for digital storytelling encourages me to take learning beyond class environment | | | | ✓ |

59

# APPENDIX K1

# BOY'S PRE-TEST MARKED SCRIPTS ON READING FLUENCY AND COMPREHENSHION FROM URBAN SCHOOL



① 48

APPENDIX B1: DRFACT TOOL TEACHER'S SCORESHEET

Name: RADAHAKU UMAR Sex: ... Age: ...

School: NA SARAWA PRAMARY I.G.A. ... Date: ... Time: 1 Min.

*Instruction: Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "Stop" and immediately mark the final word read with a bracket ( ]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an obstetric mark (*) in the box at the bottom, and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they kept some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better fertile farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law. 59

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and revered.

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community. 186

*(Culled from learn English Book three, UBE EDITION (2012).*

*Please check this box ☐ if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

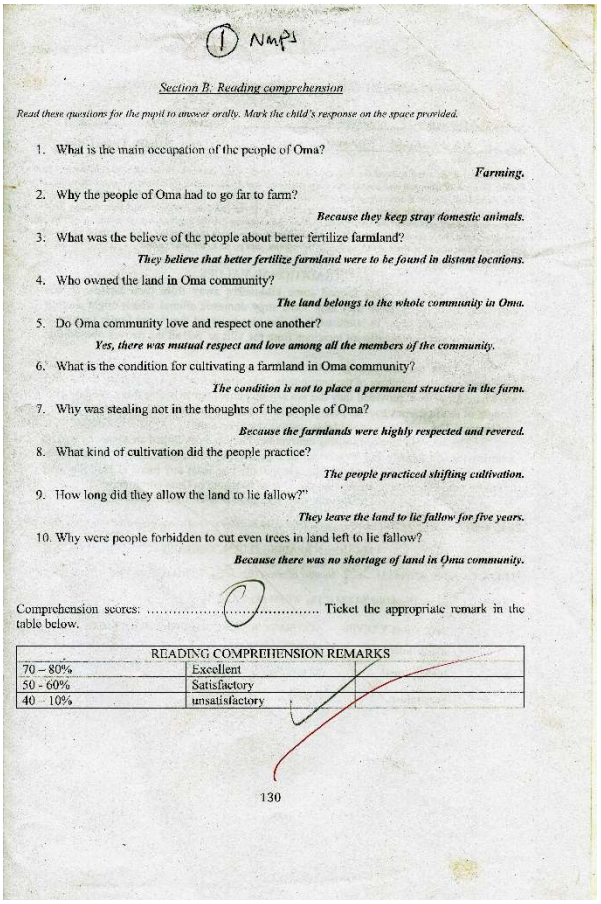
SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A) ... Number of errors (B) ... WCPM (C) = (A - B) ...

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): ... %

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98 1% | |
| Instructional | 90 to 97% | |
| Frustration | < 90% | |

129



① NMPS

*Section B: Reading comprehension*

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma?
   ***Farming.***
2. Why the people of Oma had to go far to farm?
   ***Because they keep stray domestic animals.***
3. What was the believe of the people about better fertilize farmland?
   ***They believe that better fertilize farmland were to be found in distant locations.***
4. Who owned the land in Oma community?
   ***The land belongs to the whole community in Oma.***
5. Do Oma community love and respect one another?
   ***Yes, there was mutual respect and love among all the members of the community.***
6. What is the condition for cultivating a farmland in Oma community?
   ***The condition is not to place a permanent structure in the farm.***
7. Why was stealing not in the thoughts of the people of Oma?
   ***Because the farmlands were highly respected and revered.***
8. What kind of cultivation did the people practice?
   ***The people practiced shifting cultivation.***
9. How long did they allow the land to lie fallow?"
   ***They leave the land to lie fallow for five years.***
10. Why were people forbidden to cut even trees in land left to lie fallow?
    ***Because there was no shortage of land in Oma community.***

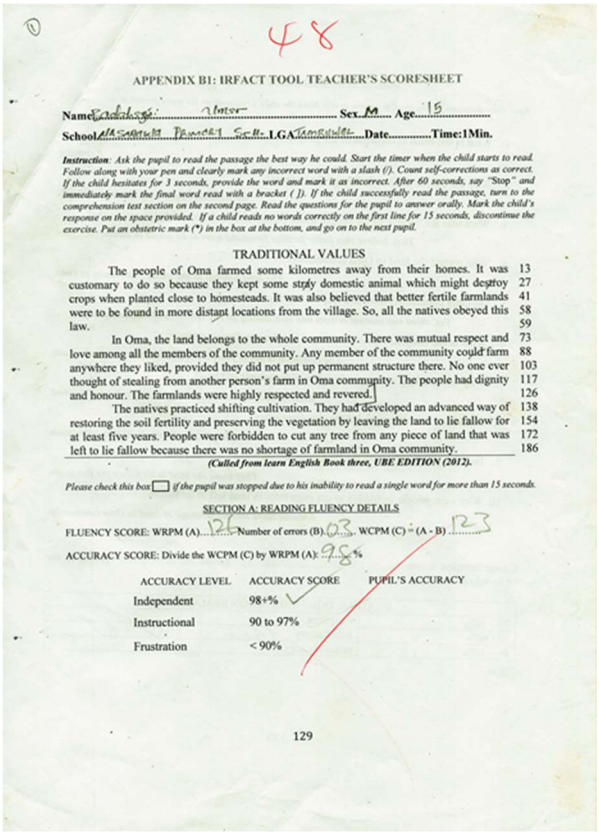
Comprehension scores: ... Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | |
|---|---|
| 70 – 80% | Excellent |
| 50 - 60% | Satisfactory |
| 40 – 10% | unsatisfactory |

130

# APPENDIX K2

# BOY'S POST-TEST MARKED SCRIPTS ON READING FLUENCY AND COMPREHENSHION FROM URBAN SCHOOL



48

APPENDIX B1: IRFACT TOOL TEACHER'S SCORESHEET

Name Sadiaba Sex M Age 15

School [illegible] L.G.A [illegible] Date..... Time: 1Min.

*Instruction: Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "Stop" and immediately mark the final word read with a bracket (]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an obstetric mark (*) in the box at the bottom, and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they kept some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better fertile farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law. 13 27 41 58 59

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and revered. 73 88 103 117 126

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community. 138 154 172 186

*(Culled from learn English Book three, UBE EDITION (2012).*

*Please check this box ☐ if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

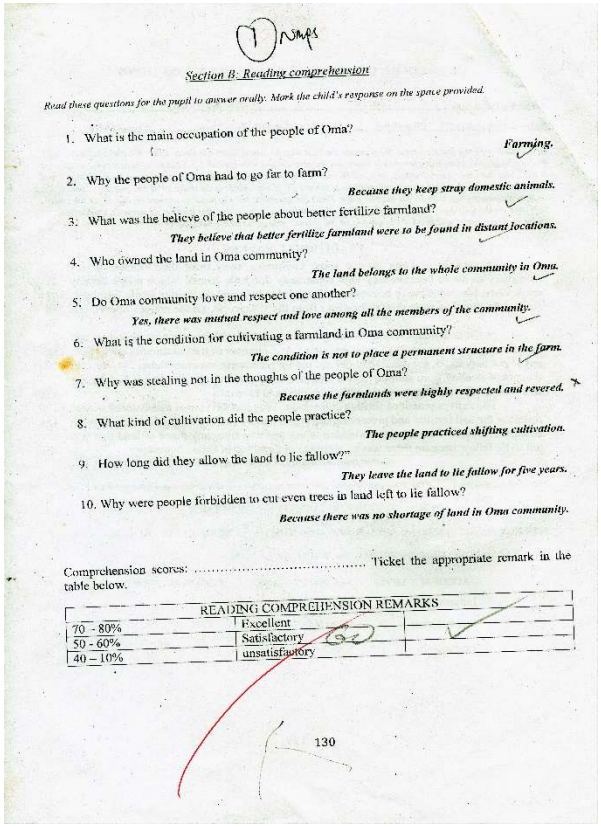
SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A) 126 Number of errors (B) 03 WCPM (C) = (A - B) 123

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): 98 %

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98+% | ✓ |
| Instructional | 90 to 97% | |
| Frustration | < 90% | |

129



7 Nmps

*Section B: Reading comprehension*

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma?
   *Farming.*
2. Why the people of Oma had to go far to farm?
   *Because they keep stray domestic animals.*
3. What was the believe of the people about better fertilize farmland?
   *They believe that better fertilize farmland were to be found in distant locations.*
4. Who owned the land in Oma community?
   *The land belongs to the whole community in Oma.*
5. Do Oma community love and respect one another?
   *Yes, there was mutual respect and love among all the members of the community.*
6. What is the condition for cultivating a farmland in Oma community?
   *The condition is not to place a permanent structure in the farm.*
7. Why was stealing not in the thoughts of the people of Oma?
   *Because the farmlands were highly respected and revered.*
8. What kind of cultivation did the people practice?
   *The people practiced shifting cultivation.*
9. How long did they allow the land to lie fallow?"
   *They leave the land to lie fallow for five years.*
10. Why were people forbidden to cut even trees in land left to lie fallow?
    *Because there was no shortage of land in Oma community.*

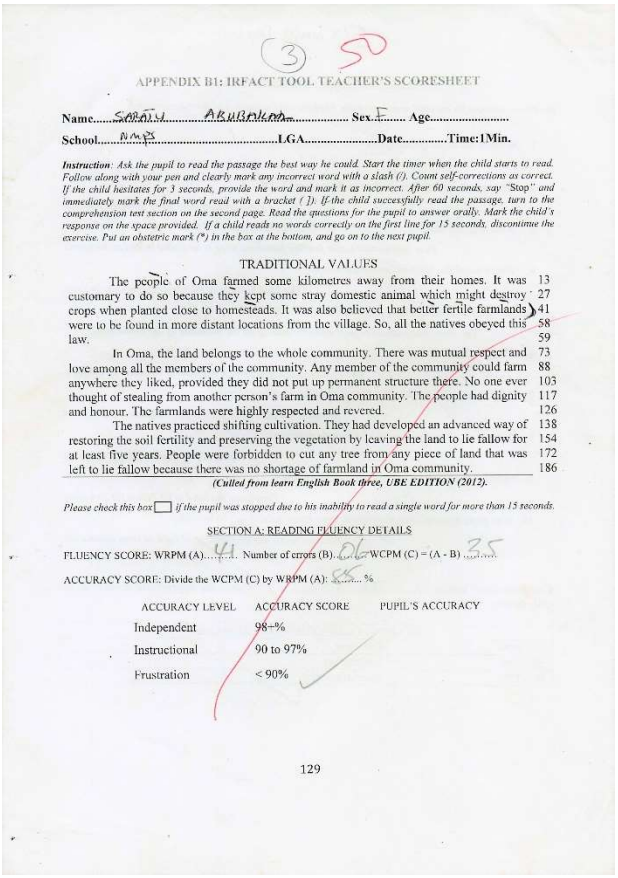
Comprehension scores: ..... Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | |
|---|---|
| 70 - 80% | Excellent |
| 50 - 60% | Satisfactory ✓ |
| 40 – 10% | unsatisfactory |

130

# APPENDIX K3

# GIRL'S PRE-TEST MARKED SCRIPTS ON READING FLUENCY AND COMPREHENSHION FROM URBAN SCHOOL



APPENDIX B1: IRFACT TOOL TEACHER'S SCORESHEET

Name.....SARAH ABUBAKAR..... Sex..F..... Age.....

School.....NMPS.....LGA.....Date.....Time:1Min.

***Instruction**: Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "Stop" and immediately mark the final word read with a bracket ( ]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an obstetric mark (*) in the box at the bottom, and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they kept some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better fertile farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law.

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and revered.

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community.

***(Culled from learn English Book three, UBE EDITION (2012).***

*Please check this box ☐ if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

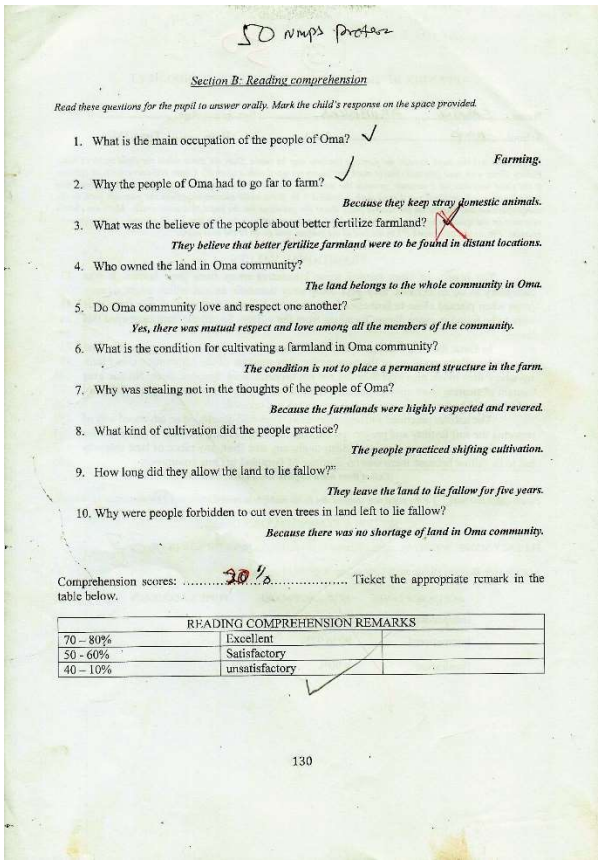
SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A)..41.. Number of errors (B)..06.. WCPM (C) = (A - B) ..35..

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): ..85.. %

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98–% | |
| Instructional | 90 to 97% | |
| Frustration | < 90% | |

129



50 NMPS Primary

*Section B: Reading comprehension*

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma? ✓
   ***Farming.***
2. Why the people of Oma had to go far to farm? ✓
   ***Because they keep stray domestic animals.***
3. What was the believe of the people about better fertilize farmland? ✗
   ***They believe that better fertilize farmland were to be found in distant locations.***
4. Who owned the land in Oma community?
   ***The land belongs to the whole community in Oma.***
5. Do Oma community love and respect one another?
   ***Yes, there was mutual respect and love among all the members of the community.***
6. What is the condition for cultivating a farmland in Oma community?
   ***The condition is not to place a permanent structure in the farm.***
7. Why was stealing not in the thoughts of the people of Oma?
   ***Because the farmlands were highly respected and revered.***
8. What kind of cultivation did the people practice?
   ***The people practiced shifting cultivation.***
9. How long did they allow the land to lie fallow?"
   ***They leave the land to lie fallow for five years.***
10. Why were people forbidden to cut even trees in land left to lie fallow?
    ***Because there was no shortage of land in Oma community.***

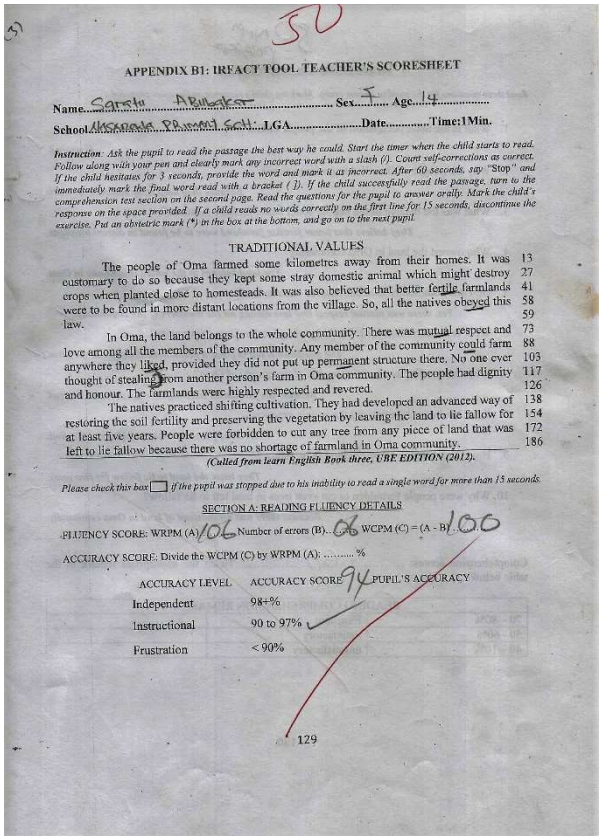
Comprehension scores: ..30 %..... Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | | |
|---|---|---|
| 70 – 80% | Excellent | |
| 50 - 60% | Satisfactory | |
| 40 – 10% | unsatisfactory | ✓ |

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# APPENDIX K4

# GIRL'S POST-TEST MARKED SCRIPTS ON READING FLUENCY AND COMPREHENSHION FROM URBAN SCHOOL



APPENDIX B1: IREACT TOOL TEACHER'S SCORESHEET

Name: Sarah Abiodun Sex: F Age: 14

School: Ikeja Girls Pilot Sch LGA: Date: Time: 1 Min.

*Instruction: Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "Stop" and immediately mark the final word read with a bracket ( ]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an obviatric mark (*) in the box at the bottom, and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they kept some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better fertile farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law.

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and revered.

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community.

*(Culled from learn English Book three, UBE EDITION (2012).*

*Please check this box ☐ if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

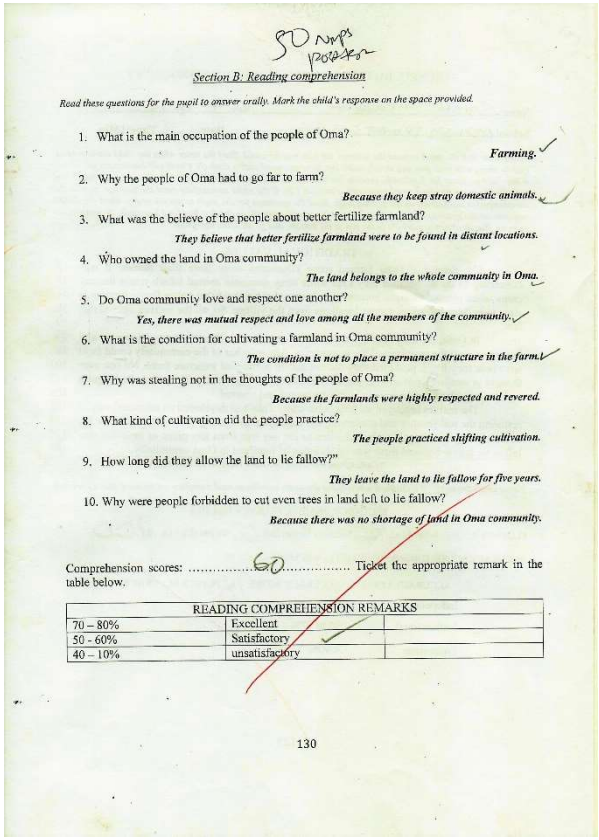
SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A) 106 Number of errors (B) 06 WCPM (C) = (A - B) 100

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): ..... %

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98+% | |
| Instructional | 90 to 97% | 94 |
| Frustration | < 90% | |

129



Section B: Reading comprehension

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma?
   ***Farming.***
2. Why the people of Oma had to go far to farm?
   ***Because they keep stray domestic animals.***
3. What was the believe of the people about better fertilize farmland?
   ***They believe that better fertilize farmland were to be found in distant locations.***
4. Who owned the land in Oma community?
   ***The land belongs to the whole community in Oma.***
5. Do Oma community love and respect one another?
   ***Yes, there was mutual respect and love among all the members of the community.***
6. What is the condition for cultivating a farmland in Oma community?
   ***The condition is not to place a permanent structure in the farm.***
7. Why was stealing not in the thoughts of the people of Oma?
   ***Because the farmlands were highly respected and revered.***
8. What kind of cultivation did the people practice?
   ***The people practiced shifting cultivation.***
9. How long did they allow the land to lie fallow?"
   ***They leave the land to lie fallow for five years.***
10. Why were people forbidden to cut even trees in land left to lie fallow?
    ***Because there was no shortage of land in Oma community.***

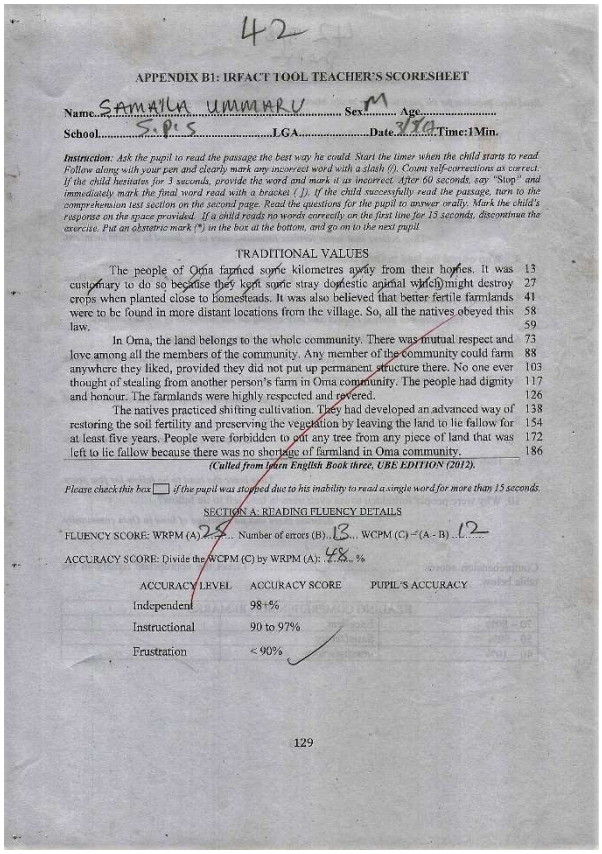
Comprehension scores: ..... 60 ..... Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | | |
|---|---|---|
| 70 – 80% | Excellent | |
| 50 - 60% | Satisfactory | ✓ |
| 40 – 10% | unsatisfactory | |

130

# APPENDIX L1

# BOY'S PRE-TEST MARKED SCRIPTS ON READING FLUENCY AND COMPREHENSHION FROM RURAL SCHOOL



42

APPENDIX B1: IRFACT TOOL TEACHER'S SCORESHEET

Name: SAMAILA UMMARU Sex: M Age:

School: S.P.S LGA: Date: Time:1Min.

*Instruction: Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "Stop" and immediately mark the final word read with a bracket ( ]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an oblatric mark (*) in the box at the bottom, and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they kept some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better fertile farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law.

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and revered.

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community.

***(Culled from Igbo English Book three, UBE EDITION (2012).***

*Please check this box ☐ if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

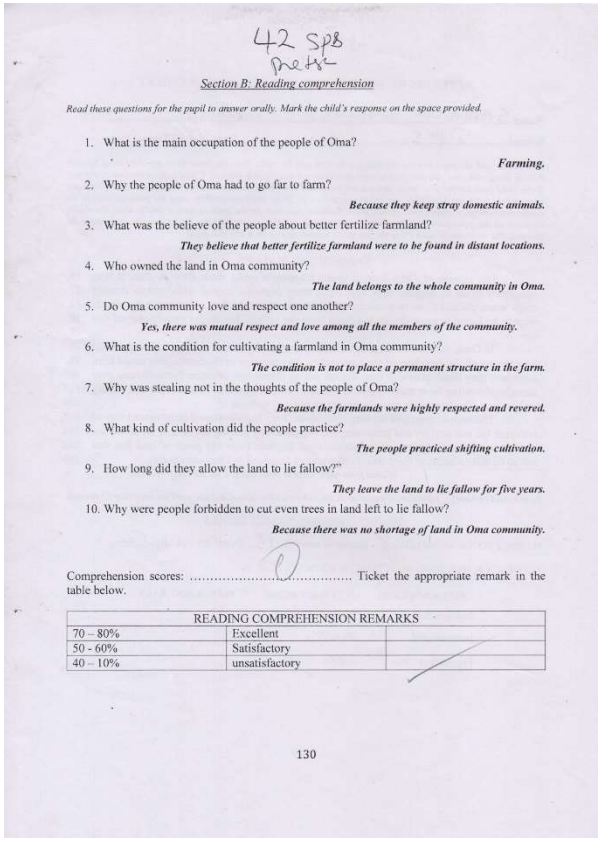
SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A) 25 Number of errors (B) 13 WCPM (C) = (A - B) 12

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): 48 %

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98+% | |
| Instructional | 90 to 97% | |
| Frustration | < 90% | |

129



42 SPS Pre-test

*Section B: Reading comprehension*

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma?

   ***Farming.***

2. Why the people of Oma had to go far to farm?

   ***Because they keep stray domestic animals.***

3. What was the believe of the people about better fertilize farmland?

   ***They believe that better fertilize farmland were to be found in distant locations.***

4. Who owned the land in Oma community?

   ***The land belongs to the whole community in Oma.***

5. Do Oma community love and respect one another?

   ***Yes, there was mutual respect and love among all the members of the community.***

6. What is the condition for cultivating a farmland in Oma community?

   ***The condition is not to place a permanent structure in the farm.***

7. Why was stealing not in the thoughts of the people of Oma?

   ***Because the farmlands were highly respected and revered.***

8. What kind of cultivation did the people practice?

   ***The people practiced shifting cultivation.***

9. How long did they allow the land to lie fallow?"

   ***They leave the land to lie fallow for five years.***

10. Why were people forbidden to cut even trees in land left to lie fallow?

    ***Because there was no shortage of land in Oma community.***

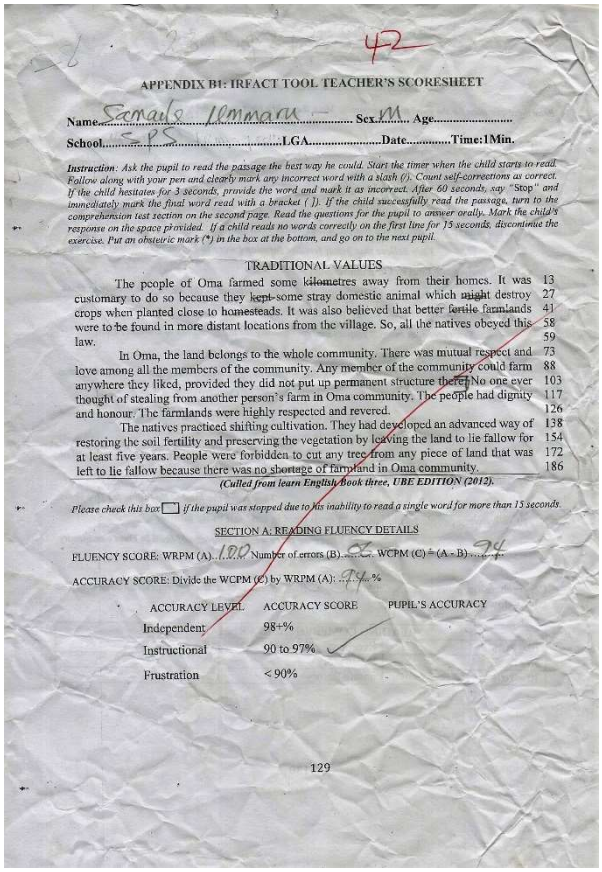
Comprehension scores: 0 Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | | |
|---|---|---|
| 70 – 80% | Excellent | |
| 50 - 60% | Satisfactory | |
| 40 – 10% | unsatisfactory | |

130

# APPENDIX L2

# BOY'S POST-TEST MARKED SCRIPTS ON READING FLUENCY AND COMPREHENSHION FROM RURAL SCHOOL



42

APPENDIX B1: IRFACT TOOL TEACHER'S SCORESHEET

Name.....Samuel Ikmaru..... Sex.M.... Age.....

School.....S.S.....LGA.....Date.....Time:1Min.

*Instruction: Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "Stop" and immediately mark the final word read with a bracket ( ]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an obustric mark (*) in the box at the bottom, and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they kept some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better fertile farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law. 13 27 41 58 59

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and revered. 73 88 103 117 126

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community. 138 154 172 186

*(Culled from learn English Book three, UBE EDITION (2012).*

*Please check this box ☐ if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

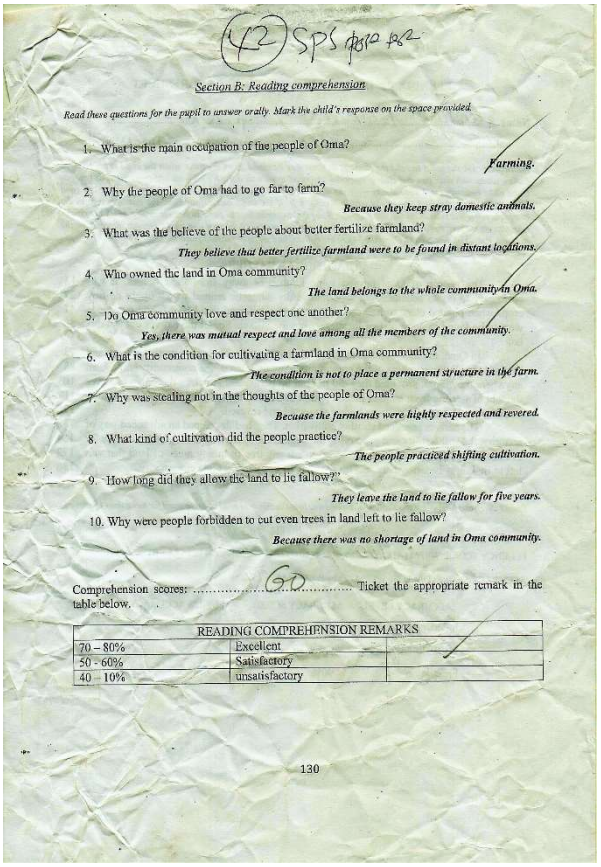
SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A)...100... Number of errors (B).....6..... WCPM (C) = (A - B).....94.....

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): ...94...%

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98+% | |
| Instructional | 90 to 97% | ✓ |
| Frustration | < 90% | |

129



42 SPS Pg10 Pg2

*Section B: Reading comprehension*

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma?
   *Farming.*
2. Why the people of Oma had to go far to farm?
   *Because they keep stray domestic animals.*
3. What was the believe of the people about better fertilize farmland?
   *They believe that better fertilize farmland were to be found in distant locations.*
4. Who owned the land in Oma community?
   *The land belongs to the whole community in Oma.*
5. Do Oma community love and respect one another?
   *Yes, there was mutual respect and love among all the members of the community.*
6. What is the condition for cultivating a farmland in Oma community?
   *The condition is not to place a permanent structure in the farm.*
7. Why was stealing not in the thoughts of the people of Oma?
   *Because the farmlands were highly respected and revered.*
8. What kind of cultivation did the people practice?
   *The people practiced shifting cultivation.*
9. How long did they allow the land to lie fallow?
   *They leave the land to lie fallow for five years.*
10. Why were people forbidden to cut even trees in land left to lie fallow?
    *Because there was no shortage of land in Oma community.*

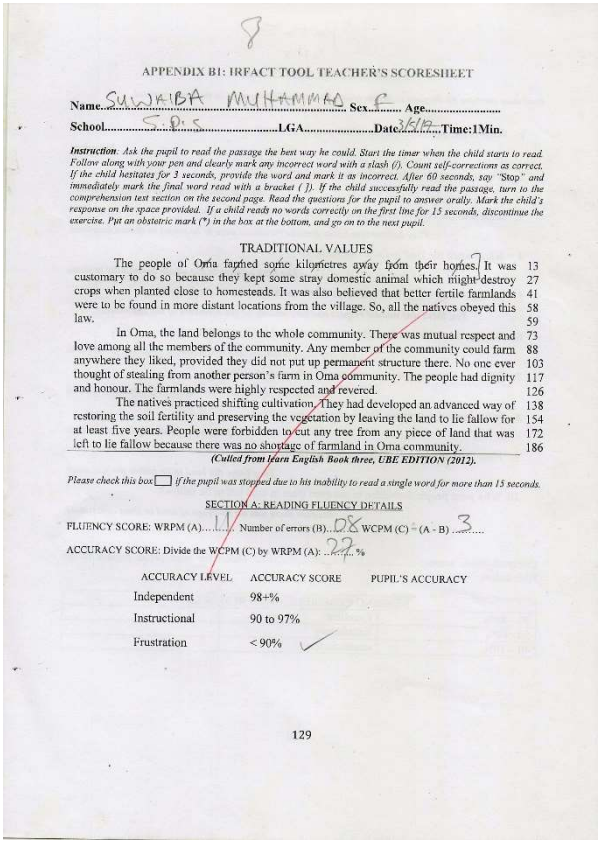
Comprehension scores: .....90..... Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | | |
|---|---|---|
| 70 – 80% | Excellent | |
| 50 - 60% | Satisfactory | |
| 40 – 10% | unsatisfactory | |

130

# APPENDIX L3

# GIRL'S PRE-TEST MARKED SCRIPTS ON READING FLUENCY AND COMPREHENSHION FROM RURAL SCHOOL



8

APPENDIX B1: IRFACT TOOL TEACHER'S SCORESHEET

Name. SULIYAIBA MUHAMMAD Sex. F Age.....

School. S.D.S .....LGA.....Date. 3/6/17 Time:1Min.

*Instruction. Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "Stop" and immediately mark the final word read with a bracket ( ]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an obstetric mark (*) in the box at the bottom, and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they kept some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better fertile farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law.

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and revered.

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community.

***(Culled from learn English Book three, UBE EDITION (2012).***

*Please check this box ☐ if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

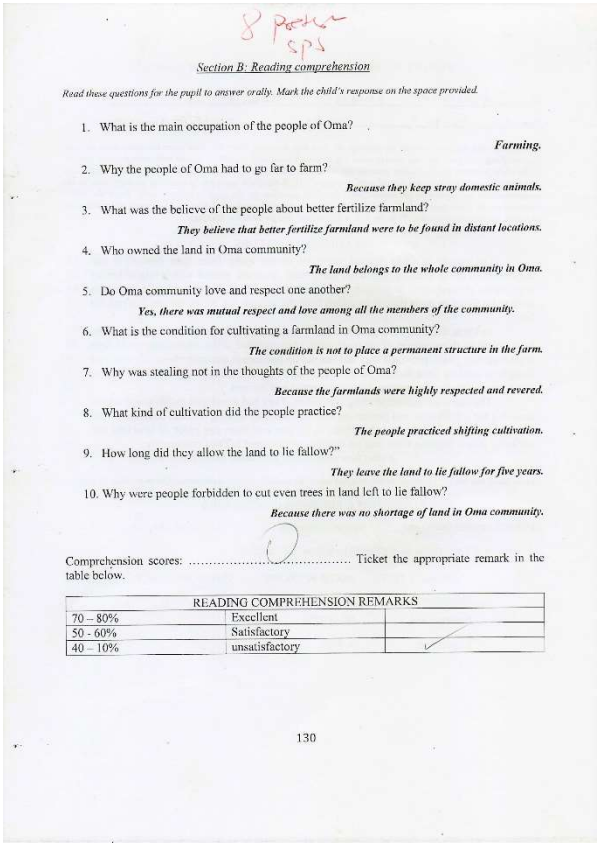
SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A)..11.. Number of errors (B)..08.. WCPM (C) = (A - B) ..3..

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): ..27.. %

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98+% | |
| Instructional | 90 to 97% | |
| Frustration | < 90% | ✓ |

129



8 Poster SPS

*Section B: Reading comprehension*

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma?
   ***Farming.***
2. Why the people of Oma had to go far to farm?
   ***Because they keep stray domestic animals.***
3. What was the believe of the people about better fertilize farmland?
   ***They believe that better fertilize farmland were to be found in distant locations.***
4. Who owned the land in Oma community?
   ***The land belongs to the whole community in Oma.***
5. Do Oma community love and respect one another?
   ***Yes, there was mutual respect and love among all the members of the community.***
6. What is the condition for cultivating a farmland in Oma community?
   ***The condition is not to place a permanent structure in the farm.***
7. Why was stealing not in the thoughts of the people of Oma?
   ***Because the farmlands were highly respected and revered.***
8. What kind of cultivation did the people practice?
   ***The people practiced shifting cultivation.***
9. How long did they allow the land to lie fallow?"
   ***They leave the land to lie fallow for five years.***
10. Why were people forbidden to cut even trees in land left to lie fallow?
    ***Because there was no shortage of land in Oma community.***

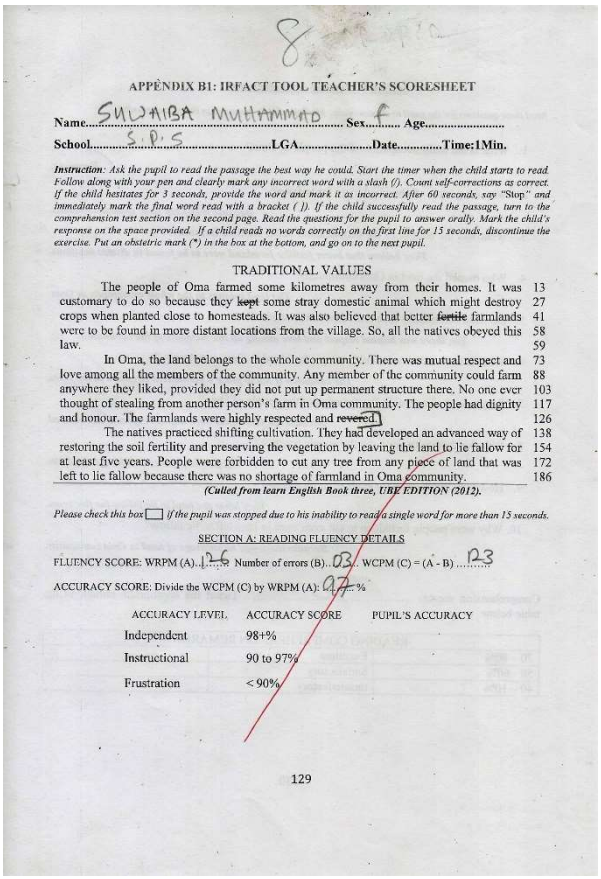
Comprehension scores: ..10.. Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | | |
|---|---|---|
| 70 – 80% | Excellent | |
| 50 - 60% | Satisfactory | |
| 40 – 10% | unsatisfactory | ✓ |

130

# APPENDIX L4

# GIRL'S POST-TEST MARKED SCRIPTS ON READING FLUENCY AND COMPREHENSHION FROM RURAL SCHOOL



APPENDIX B1: IRFACT TOOL TEACHER'S SCORESHEET

Name SULAIBA MUHAMMAD Sex F Age

School S.P.S LGA Date Time:1Min.

*Instruction: Ask the pupil to read the passage the best way he could. Start the timer when the child starts to read. Follow along with your pen and clearly mark any incorrect word with a slash (/). Count self-corrections as correct. If the child hesitates for 3 seconds, provide the word and mark it as incorrect. After 60 seconds, say "Stop" and immediately mark the final word read with a bracket ( ]). If the child successfully read the passage, turn to the comprehension test section on the second page. Read the questions for the pupil to answer orally. Mark the child's response on the space provided. If a child reads no words correctly on the first line for 15 seconds, discontinue the exercise. Put an obstetric mark (*) in the box at the bottom, and go on to the next pupil.*

TRADITIONAL VALUES

The people of Oma farmed some kilometres away from their homes. It was customary to do so because they ~~kept~~ some stray domestic animal which might destroy crops when planted close to homesteads. It was also believed that better ~~fertile~~ farmlands were to be found in more distant locations from the village. So, all the natives obeyed this law. 13 27 41 58 59

In Oma, the land belongs to the whole community. There was mutual respect and love among all the members of the community. Any member of the community could farm anywhere they liked, provided they did not put up permanent structure there. No one ever thought of stealing from another person's farm in Oma community. The people had dignity and honour. The farmlands were highly respected and ~~revered.~~ 73 88 103 117 126

The natives practiced shifting cultivation. They had developed an advanced way of restoring the soil fertility and preserving the vegetation by leaving the land to lie fallow for at least five years. People were forbidden to cut any tree from any piece of land that was left to lie fallow because there was no shortage of farmland in Oma community. 138 154 172 186

***(Culled from learn English Book three, UBE EDITION (2012).***

*Please check this box ☐ if the pupil was stopped due to his inability to read a single word for more than 15 seconds.*

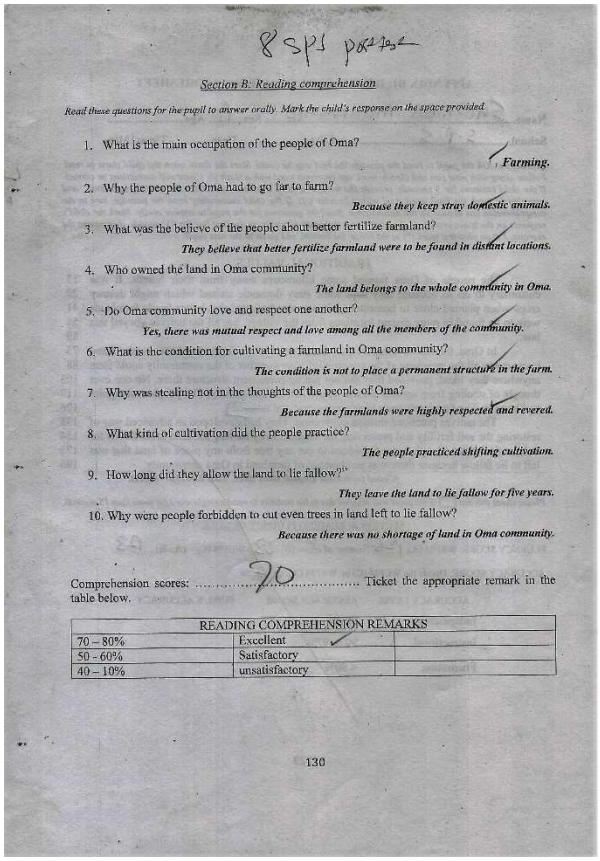
SECTION A: READING FLUENCY DETAILS

FLUENCY SCORE: WRPM (A) 126 Number of errors (B) 03 WCPM (C) = (A - B) 123

ACCURACY SCORE: Divide the WCPM (C) by WRPM (A): 97%

| ACCURACY LEVEL | ACCURACY SCORE | PUPIL'S ACCURACY |
|---|---|---|
| Independent | 98+% | |
| Instructional | 90 to 97% | |
| Frustration | < 90% | |

129



8 SPS

*Section B: Reading comprehension*

*Read these questions for the pupil to answer orally. Mark the child's response on the space provided.*

1. What is the main occupation of the people of Oma?
   ***Farming.***
2. Why the people of Oma had to go far to farm?
   ***Because they keep stray domestic animals.***
3. What was the believe of the people about better fertilize farmland?
   ***They believe that better fertilize farmland were to be found in distant locations.***
4. Who owned the land in Oma community?
   ***The land belongs to the whole community in Oma.***
5. Do Oma community love and respect one another?
   ***Yes, there was mutual respect and love among all the members of the community.***
6. What is the condition for cultivating a farmland in Oma community?
   ***The condition is not to place a permanent structure in the farm.***
7. Why was stealing not in the thoughts of the people of Oma?
   ***Because the farmlands were highly respected and revered.***
8. What kind of cultivation did the people practice?
   ***The people practiced shifting cultivation.***
9. How long did they allow the land to lie fallow?
   ***They leave the land to lie fallow for five years.***
10. Why were people forbidden to cut even trees in land left to lie fallow?
    ***Because there was no shortage of land in Oma community.***

Comprehension scores: 20 Ticket the appropriate remark in the table below.

| READING COMPREHENSION REMARKS | | |
|---|---|---|
| 70 – 80% | Excellent | ✓ |
| 50 - 60% | Satisfactory | |
| 40 – 10% | unsatisfactory | |

130

## APPENDIX M

## CURRICULUM FOR READING FLUENCY AND COMPREHENSION OF PUPILS WITH READING DIFICULTY VIA DIGITAL STORYTELLING STRATEGY

The following are procedural guidelines for the conduct of this study developed into a curriculum in context with the NERDC's Primary school curriculum. The curriculum is labelled as Curriculum for Reading fluency and Comprehension of Pupils with reading difficulties via inclusive Multimedia Instructional Strategy. DSTS Third Person Model for Content Based Digital Storytelling in Table 2.8 was employed in converting the selected passages into the multimedia formats using Pinnacle Studio 19.

| READING FLUENCY AND COMPREHENSION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Objectives** | **Strategy** | **Activities** | | **Resources** | **Interaction** | **Evaluation** |
| | | | **Teacher** | **Pupils** | | | |
| Whole Class Screening Assessments | 1. To identify pupils with reading difficulties based on their reading comprehension ability | 1. Screening assessment for pupils with reading difficulties | 1. The pupils should be comfortably seated with required materials for the assessment<br><br>2.Each pupil should have a copy of the screening test, and the instructions read to them<br><br>3. The pupils should be timed and strictly supervised | The pupils should respond to the test according to the instruction and within the stipulated time | Reading screening tool | 1. Whole class<br>2. Teacher / pupils interaction | Whole class screening test |

| READING FLUENCY AND COMPREHENSION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Objectives** | **Strategy** | **Activities** | | **Resources** | **Interaction** | **Evaluation** |
| | | | **Teacher** | **Pupils** | | | |
| Interest, Reading Fluency and Comprehension Baseline Assessment Before the weekly activities | 1. Determine pupils reading interest<br><br>2. To monitor weekly individual Pupil's reading fluency and comprehension progress<br><br>2. predict who may face reading difficulty at later stage with advanced reading tasks<br><br>3. serves as feedback on how the pupils are progressing | 1. Pre-test<br><br>and<br><br>progress monitoring assessment | 1. List the pupils in the class<br><br>2. Divide the list in half and pair the pupils correspondingly<br><br>3. Inform the objective of the exercise to the pupils right at the inception before being paired<br><br>4. Take pupil's interest, reading fluency and comprehension scores | 1. Taking the formative assessment test | 1. Copies of Individual pupil assessment tool<br><br>2. A copy of the pupil's reading passage for the assessment<br><br>3. Pupils Progress Monitoring Chart<br><br>4. Stopwatch | 1. Whole class<br><br>2. pupil/pupil interaction<br><br>3. Teacher/pupil interaction | Progress monitoring chart |

| READING FLUENCY AND COMPREHENSION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Objectives** | **Strategy** | **Activities** | | **Resources** | **Interaction** | **Evaluation** |
| | | | **Teacher** | **Pupils** | | | |
| Reading fluency and comprehension | 1. Develop oral reading fluency and comprehension<br><br>2. encourage pair tutoring and out of school activities | 1. Repeated reading aloud with teacher and Mp3 audio text<br><br>2. Mental Imagery | 1. Introduce the passage of the week<br><br>2. Inform the pupils the strategy of the week<br><br>3. Read out loud the passage to the pupils<br><br>4. Allow the pupils to play and listen to the Mp3<br><br>5. Read a section of the passage, and the pupils what image forms in your mind<br><br>6. Ask pupils to do the same<br><br>7. Based on the pupils pairing done on the first meeting, teach pupils how to record the ORF & RC scores in their PMC | 1. Listen to their instructor<br><br>2. Play their Mp3<br><br>3. Practice the strategies of the week<br><br>4. Learn to record their ORF &RC scores into their PMC according to pairs | 1. Passage of the week<br><br>2. Mp3 audio text<br><br>3. PMC<br><br>4. Mobile device to play the Mp3 audio text<br><br>5. Stopwatch | 1. Whole class<br><br>2. Pupil/pupil Interaction<br><br>3. Teacher /pupil interaction | Oral reading aloud<br><br>Progress monitoring chart |

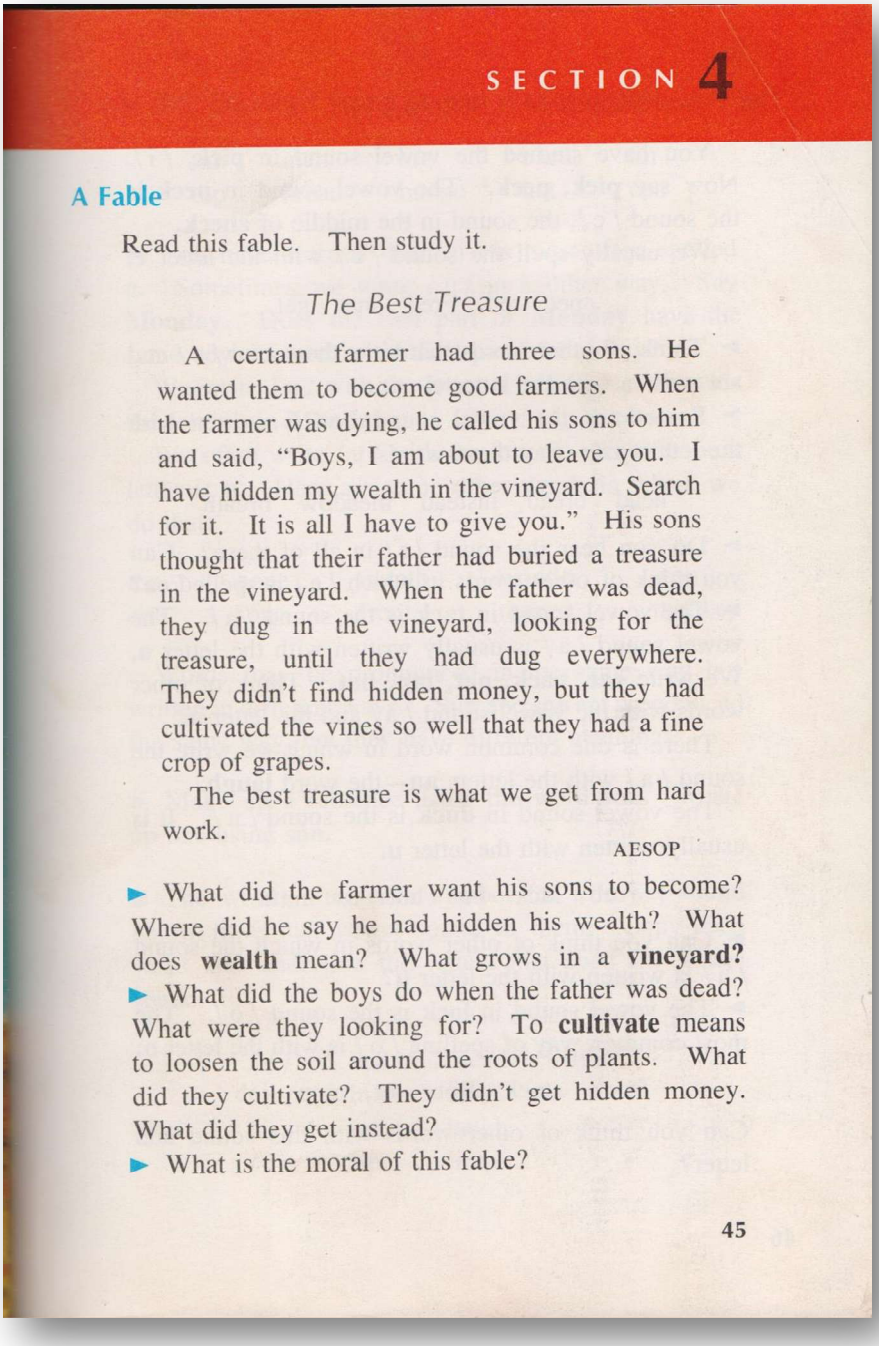
| READING FLUENCY AND COMPREHENSION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Objectives** | **Strategy** | **Activities** | | **Resources** | **Interaction** | **Evaluation** |
| | | | **Teacher** | **Pupils** | | | |
| Reading fluency and comprehension | 1. Develop interest in oral reading fluency and comprehension<br><br>2. encourage pair tutoring<br><br>3. encourage taking learning beyond school environment | 1. Partner reading<br><br>2. Repeated reading aloud with teacher and Mp3 audio text<br><br>3. Mental Imagery | 1. Introduce the passage of the week<br><br>2. Inform the pupils the strategy of the week<br><br>3. Read out loud the passage to the pupils, then allow them to play and listen to the Mp3<br><br>5. Read a section of the passage, and the pupils what image forms in your mind<br><br>6. Ask pupils to read in pairs<br><br>7. Allow them to record their ORF & RC scores in their PMC<br>. | 1. Seat in pairs<br><br>2. Play and practice with the Mp3<br><br>3. Stop the Mp3 and each pupil should read to his partner<br><br>4. practice the mental imagery strategy and each reader should relate what image comes to their mind while reading<br><br>5. record their ORF &RC scores by pairs | 1. Running passage of the week<br><br>2. PMC<br><br>3. Mp3 audio text<br><br>4. stopwatch<br><br>5. mobile Mp3 player or portable public-address system | 1. Whole class<br><br>2. Teacher/pupil interaction<br><br>3. pupil/pupil interaction | Oral reading aloud<br><br>Partner reading<br><br>PMC |

| READING FLUENCY AND COMPREHENSION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Objectives** | **Strategy** | **Activities** | | **Resources** | **Interaction** | **Evaluation** |
| | | | **Teacher** | **Pupils** | | | |
| Reading fluency and comprehension | 1. Develop interest in oral reading fluency and comprehension<br><br>2. encourage pair tutoring<br><br>3. encourage taking learning beyond school environment | 1. Repeated reading aloud<br><br>2. Modelling with teacher and Mp4 video text<br><br>3. Mental Imagery | 1. Introduce the passage of the week<br><br>2. Inform the pupils the strategies of the week<br><br>3. Read a section of the passage, and the pupils what image forms in your mind before watching the Mp4<br><br>4. Then allow the pupils to play and watch their Mp4<br><br>5. Ask pupils to read in pairs<br><br>6. Allow them to record their ORF & RC scores in their PMC<br>. | 1. Seat in pairs<br><br>2. Play, watch and practice with the Mp4<br><br>3. Stop the Mp4 and each pupil should read to his partner<br><br>4. practice the mental imagery strategy and each reader should relate what image comes to their mind while reading<br><br>5. record their ORF &RC scores by pairs | 1. Running passage of the week<br><br>2. PMC<br><br>3. Mp4 audio text<br><br>4. stopwatch<br><br>5. mobile Mp4 player or portable public-address system | 1. Whole class<br><br>2. Teacher/pupils interaction<br><br>3. pupil/pupil interaction | Oral reading aloud<br><br>Partner reading<br><br>PMC |

| READING FLUENCY AND COMPREHENSION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Objectives** | **Strategy** | **Activities** | | **Resources** | **Interaction** | **Evaluation** |
| | | | **Teacher** | **Pupils** | | | |
| Reading fluency and comprehension | 1. Monitor pupils progress<br><br>2. Develop interest in oral reading fluency and comprehension<br><br>2. encourage pair tutoring<br><br>3. encourage taking learning beyond school environment | 1. Revision of the week's activities, and<br><br>2. End of the week ORF & RC formative assessment | 1.Revise the activities of the week<br><br>2. Solve pupils' areas of difficulties<br><br>3. Take individual pupils ORF &RC . | 1. Play, watch, and listen to their DSTS recourses<br><br>2. Practice and revise the activities of the week<br><br>3. confirm and clarify areas of difficulties<br><br>4Take the end of the week assessment | 1. Running passage of the week<br><br>2. PMC<br><br>3. Mp3 audio text<br><br>4. stopwatch<br><br>5. mobile Mp3 player or portable public-address system | 1. Whole class<br><br>2. Teacher/pupils interaction<br><br>3. pupil/pupil interaction | End of the week assessment<br><br>PMC |

**APPENDIX N1**

**Scanned Copy of Passage One: The Best Treasure**



SECTION 4

A Fable

Read this fable. Then study it.

*The Best Treasure*

A certain farmer had three sons. He wanted them to become good farmers. When the farmer was dying, he called his sons to him and said, "Boys, I am about to leave you. I have hidden my wealth in the vineyard. Search for it. It is all I have to give you." His sons thought that their father had buried a treasure in the vineyard. When the father was dead, they dug in the vineyard, looking for the treasure, until they had dug everywhere. They didn't find hidden money, but they had cultivated the vines so well that they had a fine crop of grapes.

The best treasure is what we get from hard work.

AESOP

► What did the farmer want his sons to become? Where did he say he had hidden his wealth? What does **wealth** mean? What grows in a **vineyard?**

► What did the boys do when the father was dead? What were they looking for? To **cultivate** means to loosen the soil around the roots of plants. What did they cultivate? They didn't get hidden money. What did they get instead?

► What is the moral of this fable?

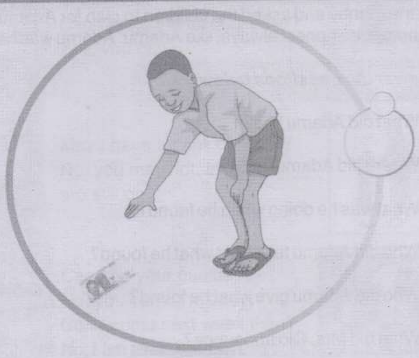
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## APPENDIX N2

## Scanned Image of Passage Two: Adamu the Honest Boy

Unit 4

A. Adamu, the Honest Boy



Adamu found a thousand naira note outside his classroom one afternoon. He was going to ease himself, when he saw the money. He first thought it was a piece of paper.

Adamu told his playmates what he found. He gave the money to Mrs. Ojo, his class teacher. Mrs. Ojo asked him how he found it. Adamu told her everything.

The following morning, Mrs. Ojo announced that some amount of money that was lost had been found. She said that those who lost their money should say how much they lost and how and where they lost it.

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Ovie had lost his money. It was the money he was given to buy some exercise books. Ovie was very happy. Mrs. Ojo gave Ovie the money and asked the children to clap for Adamu. She told them to be honest always, like Adamu. Adamu was happy.

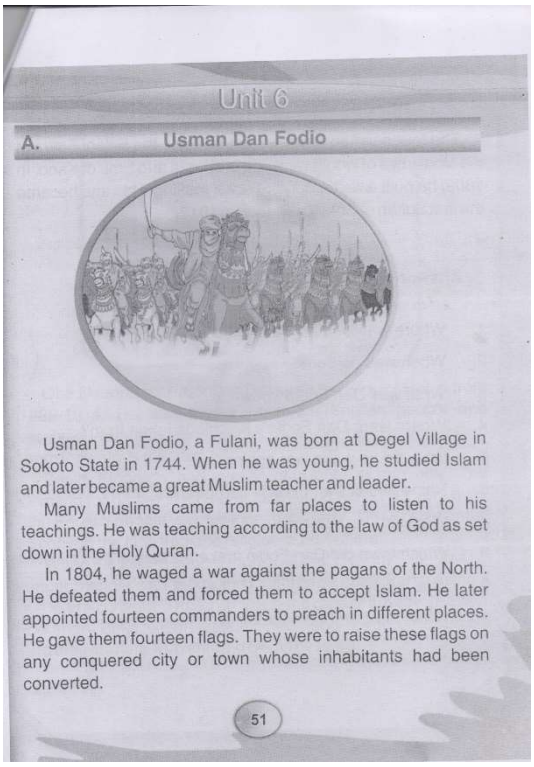
***Answer the questions below.***

1. What did Adamu find?
2. Where did Adamu find it?
3. What was he doing when he found it?
4. Who did Adamu tell about what he found?
5. Who did Adamu give what he found?
6 What did Mrs. Ojo announce?
7. Who was the owner of what was found?
8. Who did the children clap for?
9. How did Adamu feel?
10. To be honest means to always tell the .....

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## APPENDIX N3

## Scanned Image of Passage Three: Usmanu Danfodiyo



Unit 6

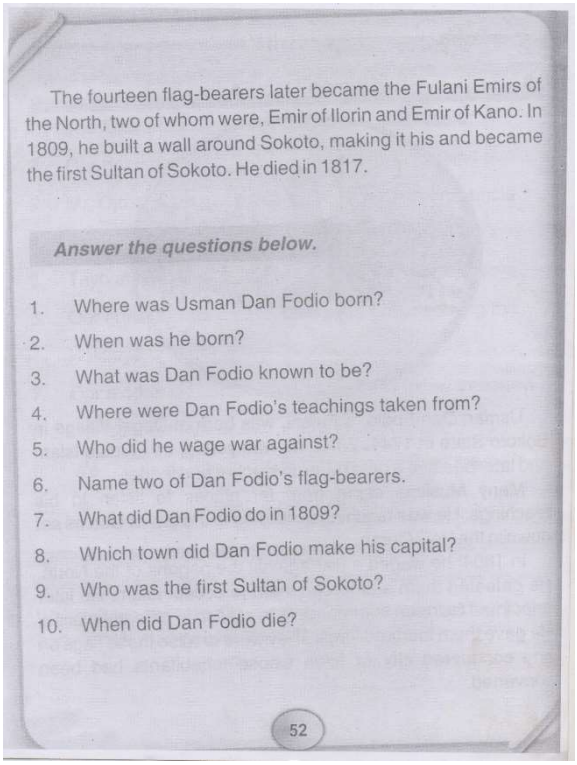
A. Usman Dan Fodio

Usman Dan Fodio, a Fulani, was born at Degel Village in Sokoto State in 1744. When he was young, he studied Islam and later became a great Muslim teacher and leader.

Many Muslims came from far places to listen to his teachings. He was teaching according to the law of God as set down in the Holy Quran.

In 1804, he waged a war against the pagans of the North. He defeated them and forced them to accept Islam. He later appointed fourteen commanders to preach in different places. He gave them fourteen flags. They were to raise these flags on any conquered city or town whose inhabitants had been converted.

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The fourteen flag-bearers later became the Fulani Emirs of the North, two of whom were, Emir of Ilorin and Emir of Kano. In 1809, he built a wall around Sokoto, making it his and became the first Sultan of Sokoto. He died in 1817.

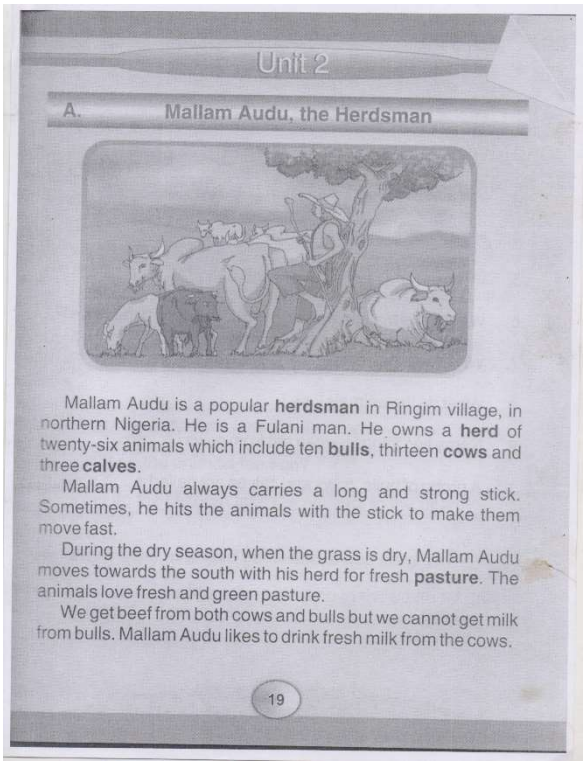
***Answer the questions below.***

1. Where was Usman Dan Fodio born?
2. When was he born?
3. What was Dan Fodio known to be?
4. Where were Dan Fodio's teachings taken from?
5. Who did he wage war against?
6. Name two of Dan Fodio's flag-bearers.
7. What did Dan Fodio do in 1809?
8. Which town did Dan Fodio make his capital?
9. Who was the first Sultan of Sokoto?
10. When did Dan Fodio die?

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## APPENDIX N4

## Scanned Image of Passage Four: The Herdsman



Unit 2

A. Mallam Audu, the Herdsman

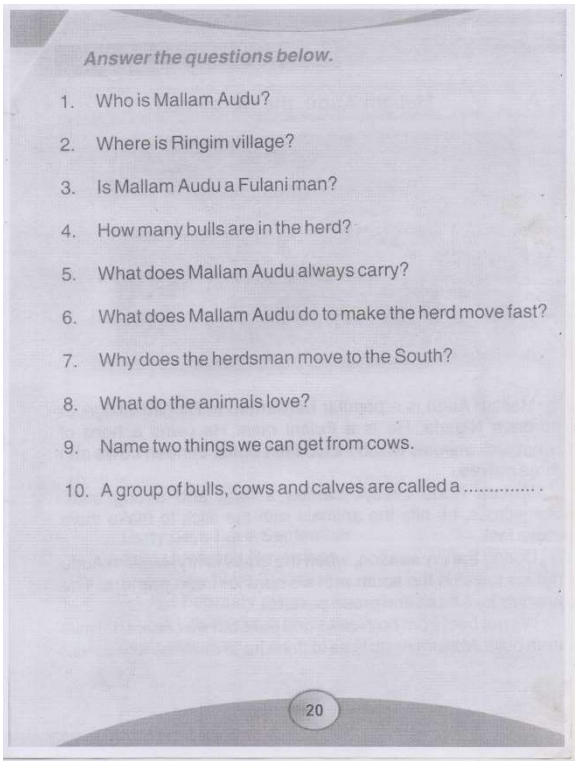
Mallam Audu is a popular **herdsman** in Ringim village, in northern Nigeria. He is a Fulani man. He owns a **herd** of twenty-six animals which include ten **bulls**, thirteen **cows** and three **calves**.

Mallam Audu always carries a long and strong stick. Sometimes, he hits the animals with the stick to make them move fast.

During the dry season, when the grass is dry, Mallam Audu moves towards the south with his herd for fresh **pasture**. The animals love fresh and green pasture.

We get beef from both cows and bulls but we cannot get milk from bulls. Mallam Audu likes to drink fresh milk from the cows.

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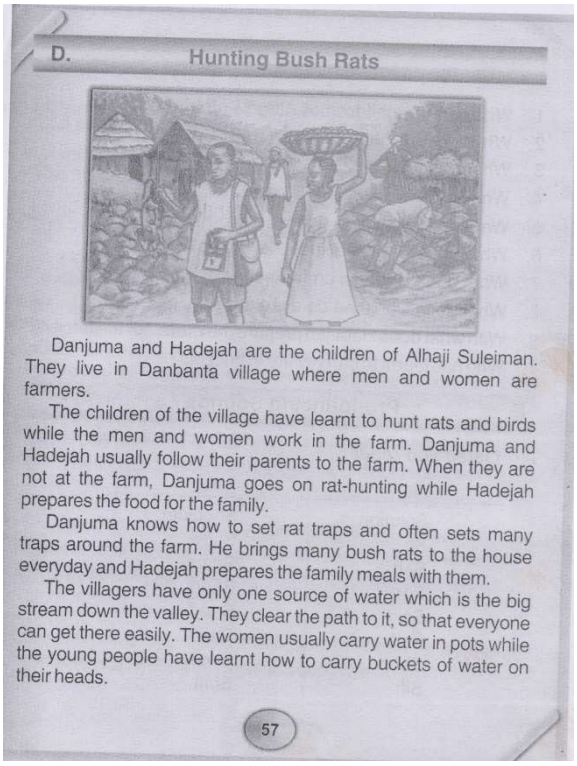
*Answer the questions below.*

1. Who is Mallam Audu?
2. Where is Ringim village?
3. Is Mallam Audu a Fulani man?
4. How many bulls are in the herd?
5. What does Mallam Audu always carry?
6. What does Mallam Audu do to make the herd move fast?
7. Why does the herdsman move to the South?
8. What do the animals love?
9. Name two things we can get from cows.
10. A group of bulls, cows and calves are called a .....

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## APPENDIX N5

## Scanned Image of Passage Five: Hunting



D. Hunting Bush Rats

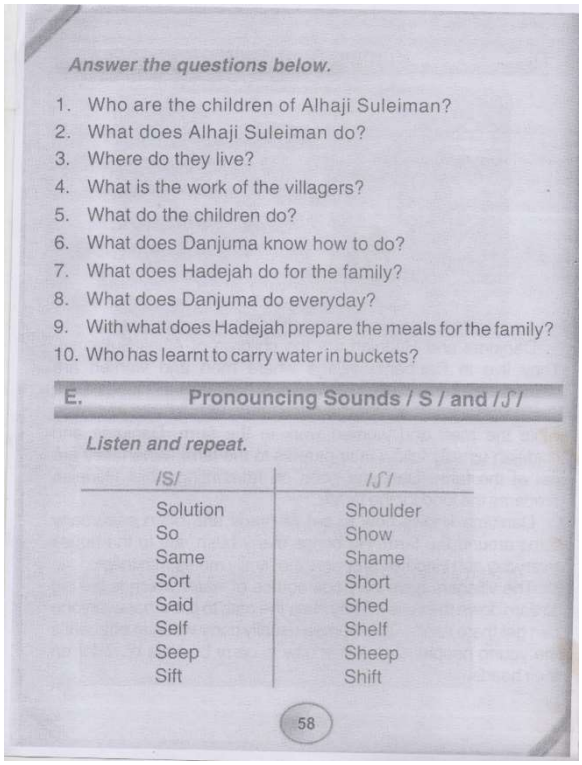
Danjuma and Hadejah are the children of Alhaji Suleiman. They live in Danbanta village where men and women are farmers.

The children of the village have learnt to hunt rats and birds while the men and women work in the farm. Danjuma and Hadejah usually follow their parents to the farm. When they are not at the farm, Danjuma goes on rat-hunting while Hadejah prepares the food for the family.

Danjuma knows how to set rat traps and often sets many traps around the farm. He brings many bush rats to the house everyday and Hadejah prepares the family meals with them.

The villagers have only one source of water which is the big stream down the valley. They clear the path to it, so that everyone can get there easily. The women usually carry water in pots while the young people have learnt how to carry buckets of water on their heads.

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*Answer the questions below.*

1. Who are the children of Alhaji Suleiman?
2. What does Alhaji Suleiman do?
3. Where do they live?
4. What is the work of the villagers?
5. What do the children do?
6. What does Danjuma know how to do?
7. What does Hadejah do for the family?
8. What does Danjuma do everyday?
9. With what does Hadejah prepare the meals for the family?
10. Who has learnt to carry water in buckets?

E. Pronouncing Sounds / S / and /ʃ/

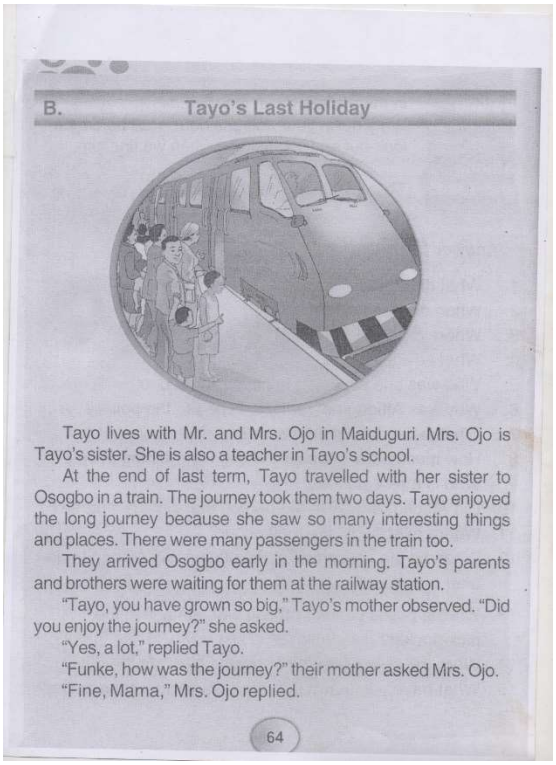
*Listen and repeat.*

| /S/ | /ʃ/ |
|---|---|
| Solution | Shoulder |
| So | Show |
| Same | Shame |
| Sort | Short |
| Said | Shed |
| Self | Shelf |
| Seep | Sheep |
| Sift | Shift |

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## APPENDIX N6

## Scanned Image of Passage Six: Tayo's Holiday



B. Tayo's Last Holiday

Tayo lives with Mr. and Mrs. Ojo in Maiduguri. Mrs. Ojo is Tayo's sister. She is also a teacher in Tayo's school.

At the end of last term, Tayo travelled with her sister to Osogbo in a train. The journey took them two days. Tayo enjoyed the long journey because she saw so many interesting things and places. There were many passengers in the train too.

They arrived Osogbo early in the morning. Tayo's parents and brothers were waiting for them at the railway station.

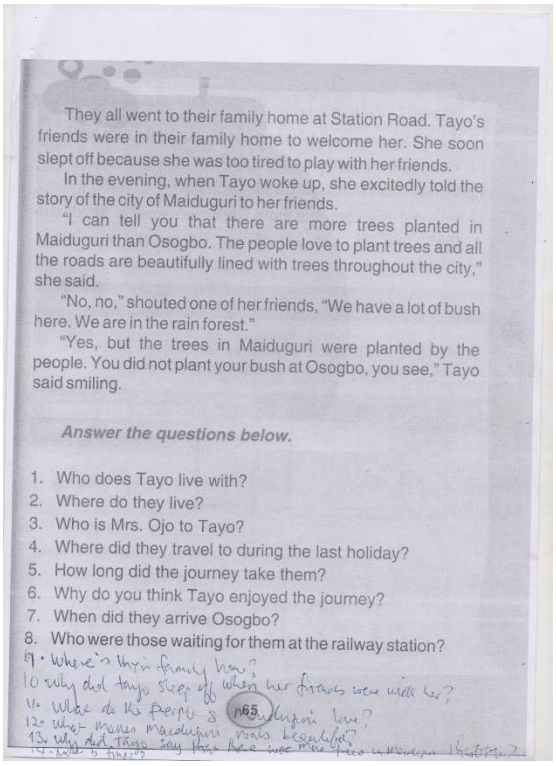
"Tayo, you have grown so big," Tayo's mother observed. "Did you enjoy the journey?" she asked.

"Yes, a lot," replied Tayo.

"Funke, how was the journey?" their mother asked Mrs. Ojo.

"Fine, Mama," Mrs. Ojo replied.

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They all went to their family home at Station Road. Tayo's friends were in their family home to welcome her. She soon slept off because she was too tired to play with her friends.

In the evening, when Tayo woke up, she excitedly told the story of the city of Maiduguri to her friends.

"I can tell you that there are more trees planted in Maiduguri than Osogbo. The people love to plant trees and all the roads are beautifully lined with trees throughout the city," she said.

"No, no," shouted one of her friends, "We have a lot of bush here. We are in the rain forest."

"Yes, but the trees in Maiduguri were planted by the people. You did not plant your bush at Osogbo, you see," Tayo said smiling.

***Answer the questions below.***

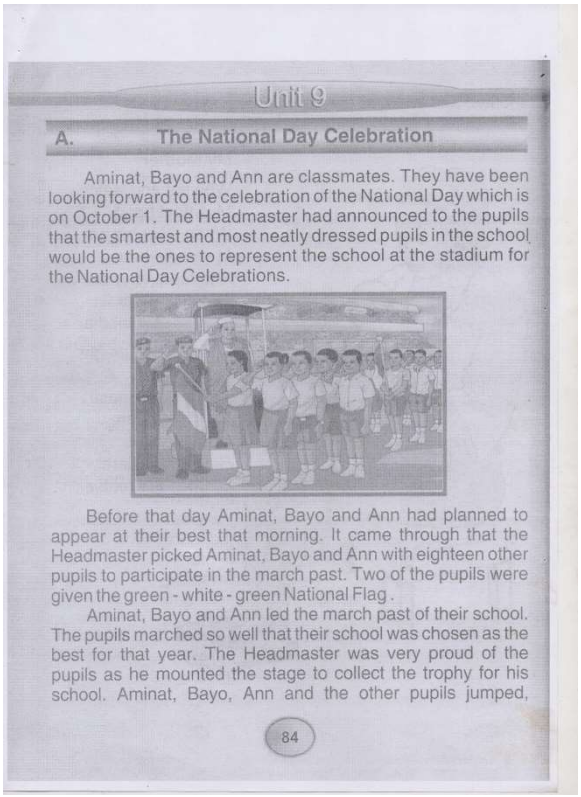
1. Who does Tayo live with?
2. Where do they live?
3. Who is Mrs. Ojo to Tayo?
4. Where did they travel to during the last holiday?
5. How long did the journey take them?
6. Why do you think Tayo enjoyed the journey?
7. When did they arrive Osogbo?
8. Who were those waiting for them at the railway station?

9. Where is their family home?
10. Why did Tayo step off when her friends were with her?
11. What do the people of Maiduguri love?
12. What makes Maiduguri roads beautiful?
13. Why did Tayo say there are more trees in Maiduguri than Osogbo?
14. Write to Tayo?

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## APPENDIX N7

## Scanned Image of Passage Seven: National Day



Unit 9

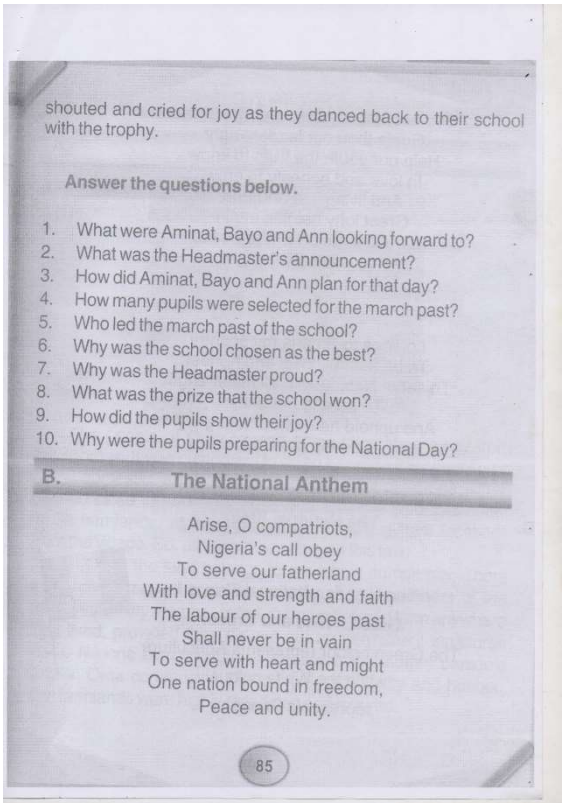
A. The National Day Celebration

Aminat, Bayo and Ann are classmates. They have been looking forward to the celebration of the National Day which is on October 1. The Headmaster had announced to the pupils that the smartest and most neatly dressed pupils in the school would be the ones to represent the school at the stadium for the National Day Celebrations.

Before that day Aminat, Bayo and Ann had planned to appear at their best that morning. It came through that the Headmaster picked Aminat, Bayo and Ann with eighteen other pupils to participate in the march past. Two of the pupils were given the green - white - green National Flag .

Aminat, Bayo and Ann led the march past of their school. The pupils marched so well that their school was chosen as the best for that year. The Headmaster was very proud of the pupils as he mounted the stage to collect the trophy for his school. Aminat, Bayo, Ann and the other pupils jumped,

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shouted and cried for joy as they danced back to their school with the trophy.

**Answer the questions below.**

1. What were Aminat, Bayo and Ann looking forward to?
2. What was the Headmaster's announcement?
3. How did Aminat, Bayo and Ann plan for that day?
4. How many pupils were selected for the march past?
5. Who led the march past of the school?
6. Why was the school chosen as the best?
7. Why was the Headmaster proud?
8. What was the prize that the school won?
9. How did the pupils show their joy?
10. Why were the pupils preparing for the National Day?

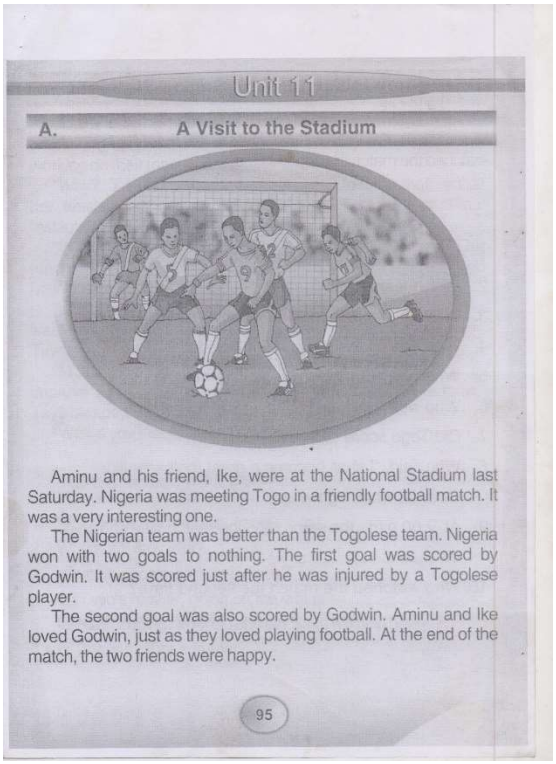
B. The National Anthem

Arise, O compatriots,
Nigeria's call obey
To serve our fatherland
With love and strength and faith
The labour of our heroes past
Shall never be in vain
To serve with heart and might
One nation bound in freedom,
Peace and unity.

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## APPENDIX N8

## Scanned Image of Passage Eight: A Visit to the Stadium



Unit 11

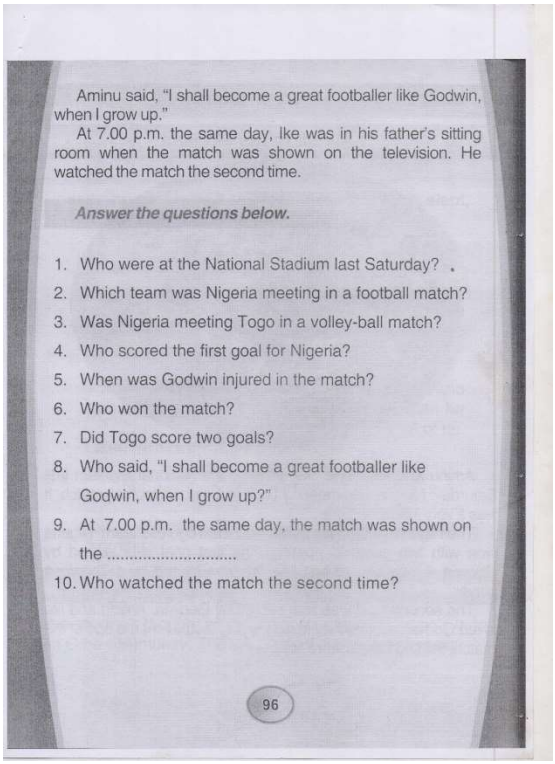
A. A Visit to the Stadium

Aminu and his friend, Ike, were at the National Stadium last Saturday. Nigeria was meeting Togo in a friendly football match. It was a very interesting one.

The Nigerian team was better than the Togolese team. Nigeria won with two goals to nothing. The first goal was scored by Godwin. It was scored just after he was injured by a Togolese player.

The second goal was also scored by Godwin. Aminu and Ike loved Godwin, just as they loved playing football. At the end of the match, the two friends were happy.

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Aminu said, "I shall become a great footballer like Godwin, when I grow up."

At 7.00 p.m. the same day, Ike was in his father's sitting room when the match was shown on the television. He watched the match the second time.

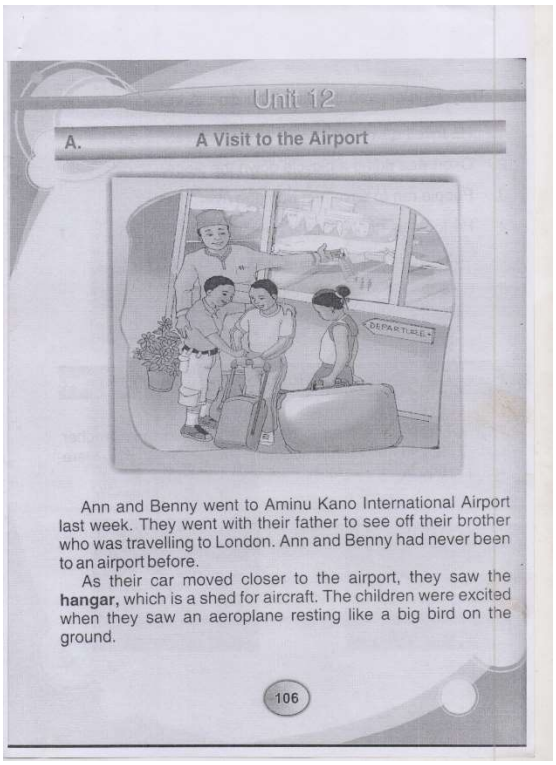
*Answer the questions below.*

1. Who were at the National Stadium last Saturday?
2. Which team was Nigeria meeting in a football match?
3. Was Nigeria meeting Togo in a volley-ball match?
4. Who scored the first goal for Nigeria?
5. When was Godwin injured in the match?
6. Who won the match?
7. Did Togo score two goals?
8. Who said, "I shall become a great footballer like Godwin, when I grow up?"
9. At 7.00 p.m. the same day, the match was shown on the .....
10. Who watched the match the second time?

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## APPENDIX N9

## Scanned Image of Passage Nine: A Visit to Aminu Kano Airport



Unit 12

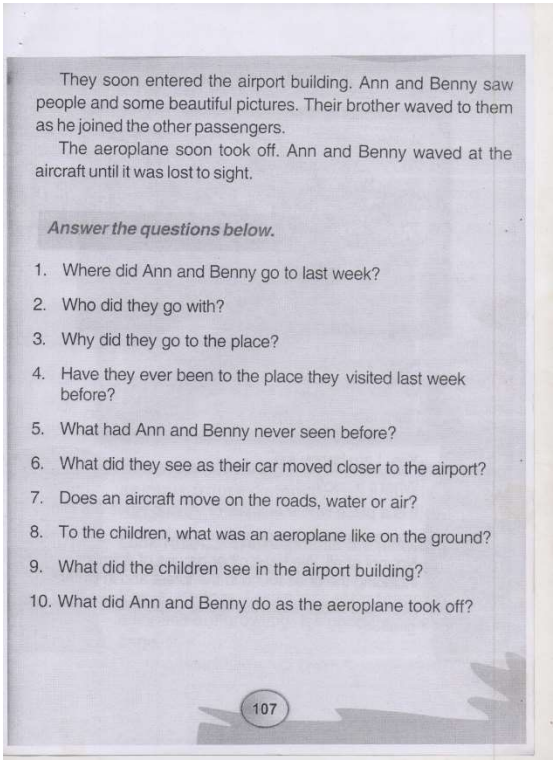
A. A Visit to the Airport



Ann and Benny went to Aminu Kano International Airport last week. They went with their father to see off their brother who was travelling to London. Ann and Benny had never been to an airport before.

As their car moved closer to the airport, they saw the **hangar,** which is a shed for aircraft. The children were excited when they saw an aeroplane resting like a big bird on the ground.

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They soon entered the airport building. Ann and Benny saw people and some beautiful pictures. Their brother waved to them as he joined the other passengers.

The aeroplane soon took off. Ann and Benny waved at the aircraft until it was lost to sight.

***Answer the questions below.***

1. Where did Ann and Benny go to last week?
2. Who did they go with?
3. Why did they go to the place?
4. Have they ever been to the place they visited last week before?
5. What had Ann and Benny never seen before?
6. What did they see as their car moved closer to the airport?
7. Does an aircraft move on the roads, water or air?
8. To the children, what was an aeroplane like on the ground?
9. What did the children see in the airport building?
10. What did Ann and Benny do as the aeroplane took off?

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## APPENDIX N10

## Scanned Image of Passage 10: Red Cross Society



Unit 14

A. Children in the Red Cross

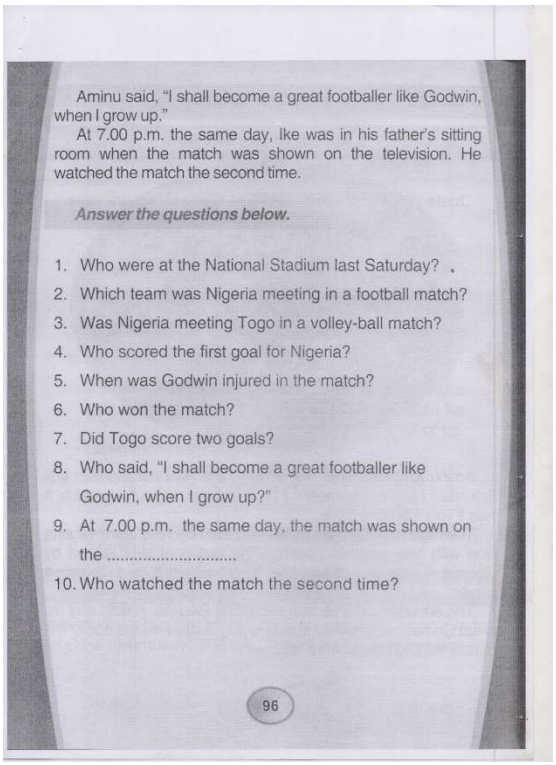
Tayo, Ben and Ike are members of the Red Cross Society in school. They like following the school football team to places where they play matches.

One day, the school team went to play against a nearby school. The Red Cross members put on their uniform and carried their First-aid box. Inside the box were a pair of scissors, some bandages, cotton wool, iodine and some balm.

When the match started, all the pupils were enjoying it. Suddenly, a player called David, fell down in the field. Tayo, Ben and Ike ran to help him, with Tayo carrying the First-aid box.

David had sprained his ankle. The Red Cross members helped him and he was able to play once more.

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Aminu said, "I shall become a great footballer like Godwin, when I grow up."

At 7.00 p.m. the same day, Ike was in his father's sitting room when the match was shown on the television. He watched the match the second time.

*Answer the questions below.*

1. Who were at the National Stadium last Saturday?
2. Which team was Nigeria meeting in a football match?
3. Was Nigeria meeting Togo in a volley-ball match?
4. Who scored the first goal for Nigeria?
5. When was Godwin injured in the match?
6. Who won the match?
7. Did Togo score two goals?
8. Who said, "I shall become a great footballer like Godwin, when I grow up?"
9. At 7.00 p.m. the same day, the match was shown on the .....
10. Who watched the match the second time?

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