IMPACT OF DIGITAL STORYTELLING ON READING INTEREST OF PUPILS WITH READING DIFFICULTIES IN SOKOTO STATE, NIGERIA

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Abstract

The study explores the Impact of Digital Storytelling on Interest of Pupils with reading difficulties (PURED) in Sokoto State, Nigeria. The problem of the study was the incessant use of traditional instructional methods in teaching reading skills to primary school pupils in the study area. The study has a sample size of 94 pupils. Descriptive research design was employed for the study. An individual pupil's reading interest assessment tool was developed to assess the reading interest of the pupils. Two research questions were asked, and two null hypotheses were formulated and tested at $\alpha=0.05$. The study informs that no significant difference was found in the level of reading interest of pupils with reading difficulties between genders. However, a significant difference was noted in the level of reading interest of participants between school locations. Thus, the study concludes that, Digital Storytelling is gender and school demography friendly for inclusive reading instruction to PURED.

Keywords: Digital Storytelling, Reading Interest, and Learners with reading difficulties

Introduction

Primary school education is a foundation upon which other forms of formal education rest. The Federal Government of Nigeria recognised this role as contained in the Nigerian National Policy on Education (FGN, 2013), to among other things inculcate literacy, for effective communication. In pursuance to these objectives, Primary Education in Nigeria is given free but, compulsory to any school-aged individual. Thus, according to the Policy, teaching Strategy in the primary schools should be participatory, exploratory, experimental, and child-centred with a teacher-pupil's ratio of 1:35.

However, despite these objectives, some pupils are finding it very challenging to cope with the learning environment due to the approach predominantly used in the study area. This prompted in accommodating the learning interest of 21st century learners. Hence, a need for inclusive instructional delivery to meet the learning needs of the pupils.

Smeda (2014) defines Digital Storytelling (DST) as the contemporary expression of the ancient art of storytelling, describing digital storytelling as a modern incarnation of the traditional art of storytelling. Storytelling was known to be an ancient tool for learning (Erkaye, 2005; Baldwin & Dudding, 2007; Soleiman & Akbari, 2013; Nguyen, Stanley & Stanley, 2014; Abdolmanafi-Rokni & Qarajeh, 2014). For example, Erkaye (2005) reports on the effectiveness of using short storytelling in language teaching. His view was that storytelling adds a new dimension to the teaching of English as a foreign language. The study affirms that storytelling helps Pupils to write more creatively, improving pupil's vocabulary and reading skills. The

major components of DST include both still and moving visual images, recorded audio narration, and background music where necessary.

Green, 2013; Robin & McNeil (2016) reported that there are two broad-techniques in which Digital Storytelling could be integrated in the classroom. One of the techniques involves learners creating their own Digital Story as an effective way of learning the concept of certain curriculum specific subjects. The second technique is exposing the pupils to teacher-made Digital Storytelling video clips. These two Strategies could be effective in engaging and accommodating both normal and slow learners or pupils with learning difficulties. The Strategies are also effective, particularly as assistive means to encourage the pupils to carry learning activities beyond school environment. This study employed the second technique of Digital Storytelling, where ten passages were selected from the pupils' recommended English reading textbook, converted to digital storytelling format and exposed to the target population.

Wortman, Loftus, & Weaver (1999); Ryan & Deci (2000) define interest as an enduring characteristic expressed by a relationship between a person and a learning activity. Contemporary interest theorists 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, while situational interest approach focussed on context-specific stimulus such as passages being culture based, appropriate, and the use of prior knowledge. Other stimuli of situational interest include the use of visual, auditory or the combination of the two to engage learners. In this study, DST multimedia formats were used as situational interest stimulants to stir the individual interest of the pupils to be engaged with their reading activities.

Reading was formally 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 unmotivated readers. In the present technologically driven society, the concept of reading as the ability to understand written discourse has changed to include Digital Multimodal discourse of digital literacy. Consequently, in this study, reading was considered as a set of complex activities that allows individuals to understand both digital and print-based information.

Pupils with reading difficulties (PURED) in this study refers to a subpopulation of English as a second language learners (ESLL) who were reduced to dormant, unintelligent- learners' due to their inability to read with fluency and comprehension at their grade level both in their native and target languages. This group of learners are found mostly in the rural areas where reading is not encouraged. They are mostly at the risk of failing or dropping out of school due to lack of affective factors to remain in school. Their challenges stem from insufficient instruction, low socio-economic status and poor learning environment among many other barriers to learning (Freeman & Freeman, 2004; Olaofe, 2001; Milne, 2005; Raponi, 2016).

Statement of the Problem

The major problem of this study is the over-dominance of traditional teaching methods in the public schools, in the study area irrespective of the diverse needs of the pupils. This predominant use of board and chalk approach alone, particularly in

the present 21st century is no longer motivating the pupils in reading, rather, it hinders the pupils' active participation resulting in poor reading performance. Perhaps many pupils drop-out of school due to lack of varying levels of support; and many others hate going to school because they feel completely excluded.

Objectives of the Study

The aim of this study was to investigate the impact of digital storytelling on reading interest of pupils with reading difficulties in Sokoto State of Nigeria. However, the specific objectives were to

1. find out the impact of digital-Storytelling Strategy on reading interest of pupils with reading difficulties between boys and girls in Sokoto State; and to
2. explore the impact of digital-storytelling strategy on reading interest of pupils with reading difficulties between rural and urban schools in Sokoto State.

Research Questions

Two research questions were generated as follows:

1. What is the difference in the mean scores of reading interest at pre-and-post-tests between boys and girls with reading difficulties exposed to Digital-Storytelling Strategy in Sokoto State?
2. What is the difference in the mean scores of reading interest at pre-and-post-tests between rural and urban pupils with reading difficulties being exposed to Digital-Storytelling Strategy in Sokoto State?

Research Hypotheses

Two null hypotheses were formulated and tested at $p \leq 0.05$ Significance level.

1. No significant difference in the mean scores of reading interest at pre-and-post-tests between boys and girls with reading difficulties exposed to Digital-Storytelling Strategy in Sokoto State.
2. There is no significant difference in the mean scores of reading interest at pre-and-post-tests between rural and urban pupils with reading difficulties being exposed to digital Digital-Storytelling Strategy in Sokoto State.

Research Design

Mixed design method was employed for the study where tests and questionnaires were used for data collection. The design is Quasi-experimental in nature. The design was chosen because it allowed the use of existing classroom structure. (Fraenkel and Wallen, 2000; Sambo, 2005; McQueen & Knussen, 2006).

Population

All primary five pupils with reading difficulty in the public primary schools in Sokoto State constitute the target population for this study. However, there is no numerical record of this special group of learners. The only available record is the population of primary five pupils in the state. And according to the Department of Research

Planning and Statistics of the State Universal Basic Education Board, the State has a total population of 25, 056 class five primary school pupils (SUBEB, 2015).

Sample Size and Sampling Techniques

One hundred and twenty two pupils (47 pupils from rural and 75 pupils from urban primary schools) were screened and selected for the study out of 150 pupils based on their test performance. The test was meant to sample out suitable candidates for the study using WHOCREST. At the end of the study, the size of the urban class was downsized to 47 pupils equal to the number of the rural class. The study therefore has 94 pupils, 47 from each of the two schools. The sample size was based on the recommendation that a minimum group of 30 participants is ideal for experimental research (Fraenkel & Wallen, 2000).

Purposive sampling technique was employed to sample the school based on the following criteria: The school must be public, receiving normal general class instructions, and not undergoing any International organisation's educational intervention programme of any sort.

Instrumentation

Two instruments were used for data collection: Individual Pupil's Reading Interest Tool (I_Print), and Whole Class Reading Comprehension Screening Test (WHOCREST). The instruments are described in the following sections.

Individual Pupil's Reading Interest Tool (I_Print)
I_Print is an adaptation of Motivation for Reading Questionnaire (MRQ) developed by Allan & 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. 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 scored 60 as the 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 rather than any external pressure or rewards. The instrument was administered before and after the treatment. The pre-test was taken within the first week of the treatment, while the post-test was taken within the last week of the treatment.

Whole Class Reading Screening Test (WHOCREST Test A and B)
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 two parts – A and B. Part A is a Hausa language reading passage, while the B part is English language reading passage. And each part has ten comprehension questions. Each correctly answered question is scored ten marks. Pupils scoring below 50 marks are considered as pupils with reading difficulties, thereby, considered as suitable participants of this study. The

pupils scoring 50+ marks are considered in this study as able readers, hence were screened out of the sample.

Result

Research Question One

What is the difference in the mean scores of reading interest at pre-and-post-tests between boys and girls with reading difficulties exposed to Digital-Storytelling Strategy in Sokoto State? Table 1 presents the Pupils' pre-and post-tests scores in reading interest by genders.

Table 1 Pre-and Post-Tests Scores of Pupils' Interest by Genders

Interest Level	**Pre-Test**			**Post-Test**		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
Low	48	46	**94**	-	-	-
Mid	-	-	-	5	3	**8**
High	-	-	-	43	43	**86**
Stopped	-	-	-	-	-	-
Total	**48**	**46**	**94**	**48**	**47**	**94**

Table 1 reveals that the scores of the pupils' reading interest between boys and girls at pre-test, fall within the range of low interest level of 15-30 points. This informs that all the participants had low interest level in reading at the pre-test level. The narratives however changed when the pupils were exposed to Digital-Storytelling Strategy. To ascertain the mean difference between gender, their mean scores at both pre-and-post-tests were compared and presented in Table 2.

Table 2 Pupils' Mean Scores of R/Interest at Pre- and-Post-Test by Gender

Test	**Gender**	**Mean**	**Mean Dif.**	**SD**	**N**
Pre-test interest score	boys	16.44	**0.27**	2.153	48
	girls	16.17		1.742	46
	Total	**16.31**		**1.957**	**94**
Post-test interest score	boys	52.65	**0.58**	6.303	48
	girls	52.07		4.063	46
	Total	**52.36**	**.85**	**5.305**	**94**

Table 2 shows that at pre-test level the boys (n = 48) scored a mean of 16.44, while the girls (n = 46) scored a mean of 16.17, with a mean difference of 0.27 between genders, in favour of the boys. After the treatment boys scored a mean of 52.65, and girls scored 52.07. This shows that DST significantly increased the mean scores of both genders more than twice of what was obtained at the pre-test. The mean difference between genders is 0.58 in favour of boys. However, the difference, apparently, is not significant enough to be considered a disadvantage to the performance of the girls.

Research Question Two

What is the difference in the mean scores of reading interest at pre-and-post-tests between rural and urban pupils with reading difficulties being exposed to Digital-

Storytelling Strategy in Sokoto State? Table 3 gives a summary of the pupils reading interest scores at both pre-and-post-test according to their school's locations.

Table 3 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 3 reveals that before the treatment, both rural and urban schools were at low interest level. However, after exposing the pupils to Digital-Storytelling Strategy, the story changed. 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 gains in interest score between pre-and-post-tests, indicate that the DST have positively inspired the reading interest level of the participants. Table 4 presents the mean scores of the two schools at both pre- and-post-test assessments.

Table 4 Mean Performance Scores of Reading Interest between Locations

Test	**Location**	**Mean**	**Mean Dif.**	**SD**	**N**
Pre-test interest score	Rural	16.26	0.10	1.870	47
	Urban	16.36		2.058	47
	Total	**16.31**		**1.957**	**94**
Post-test interest score	Rural	53.85	2.98	4.965	47
	Urban	50.87		5.265	47
	Total	**52.36**	**3.08**	**5.305**	**94**

Table 4 reveals that at the pretest Rural school (n = 47) scored a mean of 16.26 and scored 53.85 after the treatment. The Urban school (n = 47) scored a mean of 16.36 at the pre-test and scored 50.87 at the post-test. The table shows remarkable differences between the scores at the two assessments from both sides. These remarkable positive changes at the post-test, informs the impact of the DST on the performances of the participants. On the other side of the coin, the mean difference between the schools at the two exercises stand at 0.10 and 2.98 in favour of the rural school.

Null-Hypothesis One

There is no significant difference in the mean scores of reading interest at pre-and-post-tests between boys and girls with reading difficulties exposed to Digital Storytelling in Sokoto State. The hypothesis was tested using Two-way ANOVA. Table 5 presents the summary of the computation.

Table 5 Two-way ANOVA on Pupils' Interest at Pre-and-Post-Tests scores by Genders

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Interest	61053.053	1	61053.053	4401.301	.000
Interest * Gender	1.180	1	1.180	.085	.771
Error(Interest)	1276.187	92	13.872		

F (1, 92) = .085, P =.771

The result of the computation in Table 5, F (1,92) = .085, P = .771, shows that no significant difference in the mean scores of reading interest at pre-and-post-tests between boys and girls with reading difficulties exposed to Digital Storytelling in Sokoto State. Therefore, since the probability of obtaining the observed difference between the groups was greater than the stated level of significance (P≥0.05), the null hypothesis was not rejected.

Null-Hypothesis Two

No significant difference in the mean scores of reading interest at pre-and-post-tests between Rural and Urban pupils with reading difficulties exposed to Digital-Storytelling-Strategy in Sokoto State. Two-way ANOVA was employed to test the hypothesis. The summary of the analysis is presented in Table 6

Table 6 Two-way ANOVA on the Pupils' R/Interest Scores at Pre-and-Post-Tests by Locations

Test	Type III Sum of Squares	Df	Mean Square	F	Sig.
Interest	61092.133	1	61092.133	4822.241	.000
Interest * Sch. Location	111.835	1	111.835	8.828	.004
Error(Interest)	1165.532	92	12.669		

F (1, 92) = 8.828, P = .004

The summary of the Two-way ANOVA in Table 6 - F (1, 92) = 8.828, P = .004, shows significant difference in the mean scores of reading interest at pre-and-post-tests between rural and urban pupils with reading difficulties exposed to Digital-Storytelling Strategy in Sokoto State. Since, the P-value of .004 is less than the stated level of significance (p≤0.05), the null-hypothesis was rejected.

Summary of the Findings

The following are the summary of the findings of the study:

1. No significant difference was found in the mean scores of reading interest at pre-and-post-tests between boys and girls PURED exposed to DST in Sokoto State.
2. A significant difference was found between the mean scores of reading interest between rural and urban pupils with reading difficulties being exposed to Digital Storytelling in Sokoto State.

Discussion

The first finding reports that there was no significant difference in the mean scores of reading interest between boys and girls with reading difficulties exposed to Digital Storytelling in Sokoto State. The finding has broken new ground as it informs a new finding, that, situational interest of Digital Storytelling could trigger individual-pupil's interests to engage in their reading instructional activities. In addition, the result confirms (Garba & Olaofe, 2012) that the prevalent traditional form of instructional delivery, particularly to pupils with reading difficulties, is no more appealing the interest of pupils to reading, rather, it hinders the pupils' active participation resulting to poor academic score which may eventually lead pupils to drop-out of school due to lack of motivation.

The finding also confirms the assertion of Tatum (2009) who reported that Digital Storytelling activity is more desirable, more motivating, and more interesting than a single platform activity, such as completing a worksheet. Her study revealed that a multimodal activity, such as digital storytelling, sustains pupils' engagement thereby recommending the application of digital storytelling as an intervention to motivate pupils struggling with reading.

Similarly, Lourenço & Ramos (2015); Hung, Hwang, & Huang (2012) reported that digital storytelling is gender friendly and could effectively promote motivation, problem-solving competence of the pupils, and the learning achievement of both genders. This suggests that information communication technology in the classroom, specifically digital storytelling is gender friendly where both genders could be motivated than in the traditional teaching method.

The second finding reveals that there was a significant difference in the mean interest scores between Rural and Urban pupils with reading difficulties being exposed to digital storytelling in Sokoto State. This is another remarkable and ground-breaking finding of this study. The finding was very remarkable in that it alleviated the fears of many educators that integration of Digital Storytelling into school curriculum may endanger the performance of pupils from rural areas. The outcome was attributed to the effort of this study to give equal exposure to both school types, using mobile devices. Critten & Kucirkove (2015) added that, historically, children with learning disabilities have been the early adopters of educational technology to facilitate their learning. Lastly, the finding also supports the theoretical base of this study is of the opinion that, if PURED are supported with DST via repeated reading technique, their individual interest may be boosted to focus their attention on the reading instruction.

Conclusion

The results of the study, which form the findings of this study, have informed that, Digital Storytelling Strategy has the potential of influencing the intrinsic motivation of individual pupils with reading difficulties across gender and across rural and urban schools.in the study area.

Recommendations

The following recommendations were made based on the findings of the study:

The use of multimodal text of digital storytelling should be encouraged via mobile devices in the public primary schools to cater for the teaming population of pupils with reading difficulties in the study area.

In addition, teachers' training institutions should review their teachers' training curriculum to embed visual literacy in the curriculum of teacher training programmes where teachers could convert traditional text format into digital text for integration across curriculum to cater for pupils with related learning difficulties.

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