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Improving the Word Recognition Skills of Children Learning to Read in a Second Language Through Podcasts

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Abstract: Failure in visual word recognition brings about frustration and failure in reading which impinge on the achievement and reading progress of learners. In order to contribute towards assisting every child to achieve minimum proficiency in reading, this investigation examined the impact of podcasts on the abilities of second language learners in sight word recognition. The study which is quasi-experimental, made use of the pre-test post-test nonequivalent groups method. The study participants who were purposively sampled from a privately owned primary school in Enugu urban, South East, Nigeria comprise thirty elementary two learners. Pre-and post-tests were administered to the participants who were grouped into intervention and control groups. The intervention group listened to podcasts in word recognition skills while the control group learned word recognition through the usual method. Statistical tools such as means, standard deviation and analysis of covariance (ANCOVA) were utilized to analyze the data collected. The research question was answered through Standard Deviation and the learners' mean achievement scores, while the hypothesis, which was set at <0.05 level of significance, was tested with the ANCOVA. The results of the investigation showed that podcasts facilitated improvement in the word recognition skills of English as a second language (ESL) learners. The study concluded that the use of podcast proves to be an efficient instructional media capable of promoting achievement in word recognition skills of learners in an ESL classroom. On the basis of the results, exploring the use of podcasts in the teaching of word recognition skills among ESL learners was recommended.

Keywords: *English as a second language, learning to read, podcasts, reading literacy, word recognition skills.*

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Introduction

Reading is considered an important literacy skill that impacts the overall learning ability and language proficiency of an individual. Evidence abounds that students who read substantially tend to have high academic performance (Chamba & Ramirez-Avila, 2021; Short et al., 2018). The ability to read not only helps learners to increase their vocabulary, acquire knowledge in academic content areas but also serves as a key to success in the workplace (Balgan et al., 2022; Castles et al., 2018). Reading involves a number of sub-skills, such as reading comprehension, vocabulary development, decoding, word recognition, fluency, and spelling, which the learner must be successful in to be a proficient reader. Proficiency in these skills facilitates interpretation of meanings and comprehension of written texts which are the ultimate goals of reading. The reading process not only leads to the attainment of comprehension but also fosters the development of higher-order cognitive processes. In order to extract meaning from the written text, the learner employs the skills of decoding, fluency, word recognition, world knowledge, cultural knowledge and linguistic knowledge during the reading process. This explains why reading comprehension has been described as a mental process of drawing meaning out of a text depending on the reader's proficiency (Woolley, 2011). Bhatti et al. (2022) and Jiang (2022) observe that reading comprehension is made up of intricate components, among which is sight word recognition.

Word recognition, according to the Literacy Information and Communication System (LINCS) (n.d.) website, involves the ability of the reader to accurately and fluently identify words in written or printed texts. It is the ability to identify listed words without relying on the context of use for assistance. Word recognition entails accuracy and speed while reading. It requires the child's ability to automatically and correctly identify the graphemes of a language in relation to its phonemes without hesitation. Success in word identification makes reading less laborious for learners and also

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motivates them to proceed to further reading (Murray, 2016). The author also reiterates that those who find it difficult to recognize words also find it difficult to read, and this hinders them from engaging in further reading. Such readers may subsequently shy away from reading. LINC (n.d.) website affirms that learners who fail to recognize words usually mistake words by exchanging a word of seemingly similitude for a new word to be learned. This affects mostly learners who depend on context for word recognition. LINC further concludes that the inability to recognize words except through their context leads to the inability to read and learn new and unfamiliar topics. The studies of Hoedemaker and Gordon (2017) and Yap et al. (2012) reveal that the ability to recognize words is promoted by semantic knowledge through priming and effects of meanings within the context of use. This seems to be an indication that visual word recognition is a gateway to a better knowledge of the word (Monster et al., 2022). Reichle and Perfetti (2003) opine that ability in word recognition grows incrementally through exposure. The ability to learn sight words leads to the development of confidence in reading while at the same time diminishing the resentment associated with difficulty in reading (Yaw et al., 2012). Learners within this category eventually turn out to become confident and independent in the reading process.

Though word recognition is just an aspect of the reading ability or skills a learner needs to acquire, its acquisition is the foundation upon which success in other reading skills, such as fluency, vocabulary, and comprehension, hinges. Studies reveal that reading comprehension is enhanced by the ability of readers to rapidly recognize and retrieve words (Chamba & Ramirez-Avila, 2021; Fukkink et al., 2005). Due to the expectation that students must accurately read words in a text in order to understand what is read, Pallathadka et al. (2022) confirm that word recognition is essential to reading comprehension. According to them, reading comprehension may suffer from an inability to identify words or extract lexical information from a text. This explains why poor reading comprehension has been linked to the inability to decode words accurately and fluently (Müller et al., 2015).

The poor reading ability of Nigerian primary school pupils has been an issue of concern to stakeholders in education in Nigeria. As indicated in the World Bank Group's (2022) report, 70 percent of 10-year-olds in low- and middle-income countries cannot read a simple sentence or perform basic numeracy tasks. This has been confirmed by the report of a number of earlier studies (Amadi, 2019; Musa & Adamu, 2016; Okika, 2021; Raymond, 2019). Okika avers that the poor reading ability of Nigerian primary school pupils is connected to their poor performance in reading comprehension and subsequent poor performance in external examinations. Since poor reading comprehension is connected with the inability to decode words accurately and fluently, appropriate instruction in word recognition may be the long-awaited solution to the poor performance in reading comprehension of children learning to read in a second language.

Word recognition can be facilitated through the use of flashcards, lists, word grids, window cards, and constant repetition. According to Hayes (2016), teaching pupils sight words in the form of drills and practice using flashcards is the most popular and fundamental method of getting them acquainted. The author claims that flashcards allow students to come across words multiple times in a similar environment and make it easier for them to remember those words. In support of Reichle and Perfetti (2003), Hayes asserts that the most widely utilized method for teaching word recognition, particularly when working with struggling readers, is incremental rehearsal. This method exposes the student to words - both known and unknown - many times before they become second nature. Hayes adds that teaching sight words to pupils through the use of technological programs is another well-liked strategy, especially for those with reading difficulties. Computer-based sight word programs discovered by Coleman et al. (2015) and Yaw et al. (2012) are also seen as impactful reading interventions for students with reading disabilities. Podcasts are one of the technological programs that have been used in education to foster learning and instruction, especially in language skills.

Podcasts have been described as published online audio files designed to be downloaded and listened to using different mobile devices (Constantine, 2007; Dale & Pymm, 2009; Hargett, 2018). They are digital audio content which is accessible through the internet. The use of podcasts was fast-tracked during the pandemic as a way of delivering educational content to remote learners to circumvent the educational problems generated by the global lockdown. Hence, scholars observe that the Covid-19 pandemic got many people trying to proffer solutions to the problems it brought to learning and instruction (Mohamad et al., 2022; Mohamed et al., 2022; Roslin et al., 2022). Listening to podcasts is considered an effective learning tool in academic and continuing education contexts (Meade et al., 2011; Salloum & Smyth, 2013). It is an ingenious strategy used by teachers to enhance students' linguistic skills and encourage them to learn outside of formal school setting (Newman & Gallo, 2019; Pratiwi, 2022). Research has shown that the use of podcasts is of benefit to students of English as a foreign language (EFL) as it improves their linguistic competence, especially speaking and listening skills (Chaves-Yuste & de-la Pena, 2023; Indahsari, 2020; Son, 2018) and their listening comprehension ability (Abdulrahman et al., 2018; Fardavoodi et al., 2020; Pratiwi, 2022; Zou et al., 2018). Gromik (2008) also claims that podcasts give learners in non-English speaking contexts complete access to authentic and real resources for effective language learning. Such resources can promote proficiency in language skills. It is on the basis of this, that this study seeks to determine whether the use of podcasts can improve proficiency in the word recognition skills of ESL.

Literature Review

A number of studies have been conducted to determine effective techniques for instruction in word recognition skills as well as the impact of podcasts in education. Using a three-armed randomized controlled trial design, Gejl et al. (2021) determined the impacts of two interventions on early pre-reading and word recognition skills of early-grade learners. The authors compared two treatments, which involved either movement of the hands or the entire body and limited physical movements involving sitting on a chair while using paper and pencil, on students' pre-reading and word recognition abilities. The study demonstrated that hand movements were more practicable and attainable in the public school system when contrasted with whole-body movements. Meadan et al. (2008) investigated the effect of picture communication symbols (PCS) on the word recognition ability of children with academic and social-behavior difficulties using a quasi-experimental design. Their findings showed that interactional games were effective in enabling children to learn quickly within a short time of exposure to the intervention. The study further indicated that pictures helped the learners in recognizing and learning new words within a short time interval.

In a quasi-experimental study that determined the effect of audio podcasts on secondary school students' EFL linguistic competence, Chaves-Yuste and de-la Pena (2023) demonstrated that the development and usage of podcasts are helpful for enhancing the linguistic competence of EFL learners, particularly their speaking and listening abilities. Similarly, Fardavoodi et al.'s (2020) study established that, in comparison to the standard approach, educational podcasts had a greater impact on language learners' listening comprehension performance. Using the post-test only control group quasi-experimental design, Abdulrahman et al.'s (2018) study equally confirmed the significant impact of podcasts on the listening comprehension abilities of language learners. The study, which also interrogated students' attitudes towards the use of podcasts, revealed that students exhibited a positive mindset in the use of podcasts for language learning.

Moreover, the study of Dhamayanti (2022) explored the impact of using podcasts as both learning and literacy media and discovered that they were beneficial as sources of information for education and literacy respectively. The results of the study further affirmed the equivalence of podcasts to other technological media vis-a-vis Zoom, G-meet, or MS-Team, generally used for instruction and learning in the wake of the Covid-19 pandemic. The findings also unveiled the adaptability and flexibility of podcasts, which can be listened to at different times and places. The study of Pratiwi (2022) interrogated the effectiveness of podcasts on the listening comprehension of students during virtual lessons as well as the perception of students towards using podcasts for online learning. The results demonstrated that podcasts effectively enhanced students' listening comprehension during online learning. The study further confirmed the accessibility, usefulness and suitability of podcast media for instruction in virtual listening. Ramli (2017) equally affirmed that podcasts sharpened students' English learning and improved their listening and speaking skills. The study established that podcasts offered wonderful topics and tasks that enriched the knowledge and mastery of teachers and students in language abilities and educational contents.

As reported earlier in this review, the use of hand movements or whole-body movements as reading interventions to improve students' pre-reading and word recognition skills was x-rayed by Gejl et al. (2021), while Meadan et al. (2008) explored the effectiveness of picture communication symbols (PCS) on the recognition of sight words. Other studies (Abdulrahman et al., 2018; Chaves-Yuste & de-la Pena, 2023; Fardavoodi et al., 2020; Pratiwi, 2022; Ramli, 2017) focused on the effects of podcasts on the speaking skills and listening comprehension of EFL students. These studies provide documentary proof of the overwhelming benefits and positive effects of podcasts as technological media for literacy instruction in the current reality of digital-based learning.

Nonetheless, a number of studies have examined the drawbacks, obstacles, and difficulties surrounding the use of podcasts in education, despite the many positives connected with their application. Pastore (2008) established that students preferred lectures to podcasts, indicating that podcasts cannot take the place of in-person instruction. Walls et al. (2010) provided more confirmation of this, revealing that students were not genuinely prepared and willing to use podcasting for follow-up and repeat learning. From a different angle, Langbein (2010) brought up a number of concerns about using podcasts as teaching tools, including the legality of content ownership, adopting podcasts for public or private use, and educators' reluctance to accept them. Furthermore, Briand et al. (2021) discovered that a lack of technological know-how, as well as doubtful authenticity and quality of podcasts, are significant barriers to using podcasts for teaching and learning. Similarly, Ismaila et al. (2022) identified poor access to existing resources, insufficient power supply, insufficient understanding of the use of podcasts in education, and the high cost of E-learning services as barriers to podcasts adoption in Nigerian higher education.

As can be observed from the foregoing literature, the reviewed studies left a lacuna on the impact of podcasts on the word recognition skills of learners in an ESL environment. This establishes the need to interrogate the effectiveness of podcasts on the abilities of ESL learners in word recognition in Enugu urban, South East, Nigeria which is the focus of this study. The study takes its root from the Sociocultural Theory of Vygotsky (1978) which conceptualizes learning and development as being an interplay of involvement in social relationships and systematized cultural activities. The theory maintains that knowledge is co-created through a reciprocation of communal and personal activities. This theoretical concept is thus based on the dynamic interconnection between social and individual processes. Three major

themes emerge from this theory according to Wertsch (1991). The first is that personal development which is comprised of higher cognition, is established in social sources. The second is that tools and signs such as language, works of art, various systems of counting, diagrams, calculations, computers, and other similar ones moderate human actions at the communal and personal levels. These tools and signs are said to facilitate the co-creation of knowledge. They also act as means that are absorbed and personalized by the learner for future independent problem-solving activities. Finally, the third is that the first two themes are best examined on the basis of genetic or developmental analysis.

As Vygotsky (1978) notes; "Any function of a child's cultural development appears on the stage twice, or on two planes, first the social, then the psychological, first between people as an intermental category, then the child as an intramental category" (pp.105-106). This notion portrays a situation whereby learners rely on people who are more well-informed when engaging in a new activity. However, they later participate in more self-dependent and individualized tasks as a result of new strategies and knowledge acquired during such interactions. Rogoff (1990) views this type of interaction as guided learning. The well-informed person only guided the child. Using podcasts for instruction in word recognition blends with the tenets of this theory. Podcasts provide a platform for children to interact with the teacher and other more knowledgeable or well-informed individuals in the course of learning to read. This interaction is expected to facilitate the co-creation of knowledge with the teacher/podcaster acting as a guide to introduce the learners to word recognition skills. The use of podcasts for instruction in word recognition embodies both individualized and collaborative learning tasks which enhance the active involvement of learners in the English language classroom. With the use of podcasts, it is expected that learners will be exposed to the acquisition of word recognition skills that will transform them to become automatic and independent readers capable of comprehending any reading task.

Purpose of the Study

The aim of the study was to examine whether podcasts will be effective in improving the word recognition skills of ESL learners. It specifically investigated whether there would be a difference in the word recognition ability of those who were exposed to learning word recognition through podcasts and those who learned through the usual method.

Research Question

One research question guided the study.

What is the difference in the average performance scores of students who learned word recognition through listening to podcasts and those who learned through the usual method?

Hypothesis

A null hypothesis was drawn up and tested at <0.05 level of significance to guide the study.

H₀₁ There is no significant difference between the average performance scores of students who learned word recognition through podcasts and those who learned through the usual method.

Methodology

Research Design

The design of the study was quasi-experimental. It precisely employed the pretest posttest nonequivalent groups method. The design is usually employed to examine the efficacy of an intervention. The pretest posttest nonequivalent groups method incorporates an intervention group and a control group, the aim being to ascertain whether participants in the intervention group will show more improvement than those in the control group after receiving the intervention (Jhangiani et al., 2019) as is the case in this study.

Sample and Data Collection

This study has a sample of thirty primary two pupils purposively sampled from a private primary school in Enugu urban, Enugu State, South East Nigeria. The participants were grouped into intervention and control groups. Both groups were pre-tested before intervention was administered. The intervention group listened to podcasts on word recognition skills accompanied by flashcards, word grids, and window cards, which were the usual techniques for instruction in word recognition three times per week. The control group, on the other hand, learned through the usual method. The parents of the participants in the intervention group were also involved in administering the podcasts to the learners at home three times per week. The intervention lasted for a period of eight weeks after which a post-test was administered. The instrument used in generating data was the Word Recognition Achievement Test (WRAT), which was designed to test the learners' ability to recognize words. The content validity of the WRAT was obtained using experts in reading literacy who confirmed the suitability of the test to the focus of word recognition skills and the general purpose of evaluating learners' ability to recognize and read words. To determine the reliability of the instrument, the WRAT was trial-tested on research subjects who possessed similar characteristics as the main study

participants. The internal consistency of the test was calculated with Kuder Richardson (KR-20) formula and a reliability index of 0.80 was obtained. This indicates that the instrument was reliable.

Analyzing of Data

The data generated from both the pretest and posttest were analyzed with mean, standard deviation and ANCOVA. The research question was answered using Mean and Standard Deviation. This was further validated by the ANCOVA which was used to test the hypothesis at <0.05 level of significance. To ensure the appropriateness of ANCOVA for the study, its assumptions (normality, homogeneity of regression slopes, and linearity) were tested and clearly stated.

Results

Table 1 indicates that the participants in the intervention group who listened to podcasts during word recognition instruction had pretest mean score of ($M = 28.81, SD = 8.32$) and posttest mean score of ($M = 57.44, SD = 7.44$) while those in the control group who were not exposed to podcasts in word recognition had pretest mean score of ($M = 28.79, SD = 8.87$) and posttest mean score of ($M = 50.29, SD = 7.02$) respectively. The intervention group gained an average score of 28.63 while the control gained 21.5. The difference between the gain scores for both groups (7.13) indicates that the intervention group performed better than the control group. The result, therefore, shows that the use of podcasts for instruction in word recognition facilitates improvement in learners' performance in word recognition skills.

Table 2 indicates a significant difference between the performance scores of participants who listened to podcasts and those who did not listen to podcasts in word recognition whilst controlling for the pretest ($F = 92.569, p < .001$). The exact probability value of .000 indicated in the result is less than the level of significance rated at <0.05 ($p < .05$). Thus, the null hypothesis is rejected. This shows that students who listened to podcasts in word recognition have a significantly higher mean score. Moreover, the partial Eta squared value of 0.774 suggests that the effect size of the method is substantial. This means that 77.4% of the variation in the performance scores is attributed to the use of podcasts for instruction in word recognition when controlling for pretest.

Table 3 which is the ANCOVA normality assumption indicates that the significant values of the Kolmogorov-Smirnov and Shapiro-Wilk tests are greater than 0.05 level of significance, an indication that the dependent variable (posttest) for the method used is normally distributed. Hence, the normality assumption is met. In the same vein, Table 4 (Homogeneity of Regression Slopes assumption) shows that the significant value (.827) of the test statistic is greater than .05 level of significance which means that the homogeneity of regression slopes assumption is not violated. The table further indicates that there is no significant interaction of the covariate (pretest) and the method used. Figure 1 shows the linearity assumption test. The scatter diagram shows a regular pattern of points of posttest and pretest increasing from lower left to upper right, indicating a linear relationship. Therefore, the linearity assumption is met.

Table 1. Average Performance Scores of Students Who Learned Word Recognition Through Podcasts and Those Who Learned Through the Usual Method

Groups	N	Pretest Mean $\pm$ SD	Posttest Mean $\pm$ SD	Gain Scores	Gain scores Difference
Experiment	16	28.81 $\pm$ 8.32	57.44 $\pm$ 7.44	28.63	7.13
Control	14	28.79 $\pm$ 8.87	50.29 $\pm$ 7.02	21.5	

Table 2. ANCOVA of Average Performance Scores of Students Who Learned Word Recognition Through Podcasts and Those Who Did Not

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1741.985 ^a	2	870.992	212.408	.000	.940
Intercept	2129.055	1	2129.055	519.210	.000	.951
Pretest	1360.079	1	1360.079	331.680	.000	.925
method	379.584	1	379.584	92.569	.000	.774
Error	110.715	27	4.101			
Total	89657.000	30				
Corrected Total	1852.700	29				

a. R Squared = .940 (Adjusted R Squared = .936), Dependent Variable: Posttest

Table 3. Test of Normality

		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	method	Statistic	df	Sig.	Statistic	df	Sig.
Posttest	Experiment	.143	16	.200*	.944	16	.404
	Control	.203	14	.123	.903	14	.126

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 4. Homogeneity of Regression Slopes Assumption

Tests of Between-Subjects Effects						
Dependent Variable: Posttest						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1735.918 ^a	2	867.959	.190	.827	.005
Intercept	2134.144	1	2134.144	6.790	.011	.090
method * Pretest	1735.918	2	867.959	.190	.827	.005
Error	116.782	27	4.325			
Total	89657.000	30				
Corrected Total	1852.700	29				

a. R Squared = .005 (Adjusted R Squared = -.023)

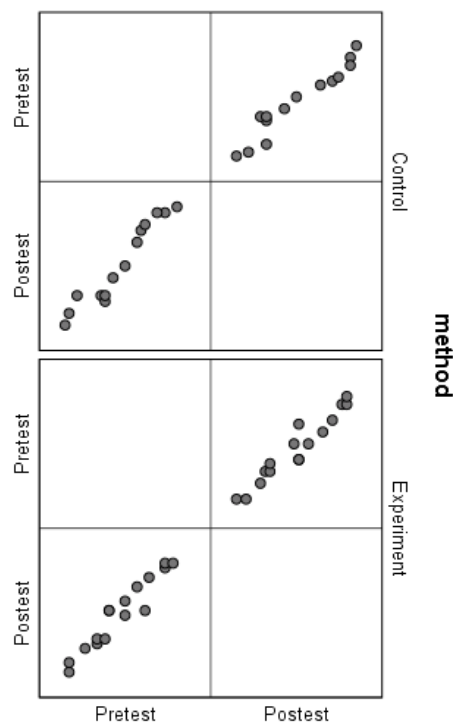


Figure 1. Linearity Assumption

Discussion

The aim of this study was to investigate whether using podcasts for instruction in word recognition improved achievement in word recognition skills among students learning to read in a second language. The results obtained from the study as shown in Table 1 disclosed that podcasts facilitate improvement in the word recognition skills of the students. The students in the intervention group had significantly higher average scores than the control group in the Word Recognition Achievement Test. This was further authenticated by the ANCOVA in Table 2 which confirmed the existence of a significant difference in the average scores of the two groups in support of the intervention group. This shows that the use of podcasts for instruction in sight word recognition proves to be an ingenious technology that facilitates the development and improvement of the word recognition skills of ESL learners.

The results of this study align with the findings of Abdulrahman et al. (2018), Fardavoodi et al. (2020), Pratiwi (2022) as well as Zou et al. (2018) which demonstrated that the use of podcasts improved the listening comprehension ability of students. Similarly, it is in tandem with the studies of Chaves-Yuste and de-la Pena (2023), Indahsari (2020) and Son (2018) which established that podcasts are beneficial to English as a Foreign Language Learners (EFL) by facilitating improvement in their linguistic competence, particularly speaking and listening skills. The findings of this study also corroborate Ramli's (2017) earlier study which confirms the effectiveness of podcasts in sharpening and improving students' English learning in addition to their listening and speaking skills.

The results of the study also give credence to the claims of Gromik (2008) which emphasized that podcasts give learners in non-English speaking contexts complete access to authentic and real resources which promote proficiency in language skills. In line with this claim, students in this study were exposed to podcasts on sight words and high frequency words which were produced by literacy experts. The results obtained from this study are also confirm the assertions of Meade et al. (2011), Salloum and Smyth (2013) which highlight that listening to podcasts is considered an effective learning tool in academic and continuing education contexts. In the same vein, it agrees with the claims of Newman and Gallo (2019) and Pratiwi (2022) that podcasts are creative techniques used by teachers to improve the linguistic skills of learners and encourage learning beyond the classroom. The parents of the study participants in this research assisted in using podcasts in word recognition to encourage learning beyond the classroom.

The results of this study further confirm the report of Dhamayanti (2022) which demonstrated the equivalence of podcasts to other technological media vis-a-vis Zoom, G-meet, or MS-Team, which are commonly used for online learning and instruction. They also authenticate Hayes' (2016) advocacy for the use of podcasts as another popular technological media for instruction in sight words, especially for those with reading disabilities

The positive impact of the podcasts on students' word recognition achievement scores revealed in this study can be attributed to the level of exposure to word recognition skills that the students in the conventional group were subjected to during the intervention program. The use of podcasts gave them the opportunity to encounter sight words as they heard them being called out by the podcaster, which increased their sight word exposure. This is in line with Hayes' (2016) assertion that incremental rehearsal proves to be the most popular technique that can be used for instruction in word recognition, especially when working with struggling readers. The use of the podcast technique presents known and unknown words to the learner many times before mastery was attained. Thus, podcasts present opportunities for enough exposure to educational content as well as adequate practice during and after the instructional process.

Conclusion

Going by the results of this study, it is evident that podcasts are effective and efficient technological media that facilitate the development of the word recognition skills of ESL learners. Hence, it can be concluded that the use of podcasts proves to be an efficient and transformational technique capable of promoting incremental improvement in the word recognition skills of learners in an ESL classroom. This is supported by the fact that students who received instruction in word recognition through podcasts had higher learning outcomes which significantly outweighed that of their counterparts who did not.

Recommendations

Owing to the results of this study, it is advocated that the use of podcasts should be explored for instruction in word recognition skills among ESL learners. The training of teachers and parents on how to produce and use podcasts for instruction in word recognition through seminars and workshops is also paramount. It is expedient for future researchers to engage in further studies on the use of podcasts for instruction in word recognition using larger population and designs with longer durations. The attitude of parents and ESL teachers towards the use podcasts for literacy instruction should also be in the front burner of future researchers and practitioners in education.

Limitations

The generalizability of the results of the study requires caution owing to the design and sample size involved. The limited knowledge of teachers on the use of podcasts for literacy instruction was also a limitation.

Ethics Statements

The researchers kept to ethical considerations in research while carrying out the investigation. The study participants were asked for their verbal consent before the commencement of the study. Owing to the age of the participants, the consent of their parents was also sought and obtained. They were informed that participation was voluntary, with the freedom to opt out at any time. The names or pictures of the participants were neither taken nor used in the research. Those who were not willing to continue with the study were not included in the sample of the study. All the authors of the reviewed document and secondary data were properly cited.

Authorship Contribution Statement

Amadi: Conceptualization, design, drafting the manuscript. Nnamani: data analysis /statistical analysis/interpretation. Ossai: data acquisition, critical review of manuscript and technical support

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