

THE EFFECT OF PODCASTS ON THE READING ACHIEVEMENT OF CHILDREN LEARNING TO READ IN ENGLISH

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ABSTRACT

Reading literacy has been persistently affected by a learning poverty crisis, particularly among children learning to read in a second language. This crisis impedes progress toward Sustainable Development Goal (SDG) 4, which aims to ensure that all children achieve minimum proficiency in reading. Contributing to the pursuit of this goal, this study investigated the effect of podcasts on the reading achievement of learners of English as a second language. A non-equivalent control group, quasi-experimental design was employed. Thirty-five Primary Two pupils were purposively selected from a private school in Enugu State, Nigeria, and assigned to experimental and control groups. Following a pre-test, the experimental group received podcast-integrated phonics instruction, while the control group received phonics

instruction only. After a seven-week intervention, a post-test was administered. Data were analyzed using descriptive statistics (Mean, Standard Deviation) and Analysis of Covariance (ANCOVA). The findings revealed that the experimental group, which received podcast-integrated instruction, demonstrated a significantly greater improvement in reading skills than the control group. It was concluded that combining podcasts with phonics provides a more effective mode of teaching reading. The study recommends the integration of podcasting technology into literacy curricula to mitigate the learning poverty crisis and facilitate the attainment of SDG 4.

Key Words: English as a Second Language, Podcast, Reading Achievement, Learning to Read, Reading Literacy

INTRODUCTION

The proliferation of digital media has fundamentally altered how learners access information and engage with content. Among these new mediums, podcasts have achieved significant popularity as a ubiquitous source of entertainment, education, and storytelling. While

their impact on auditory learning is clear, their potential influence on reading achievement remains a compelling question.

Reading is a foundational literacy skill, encompassing a range of critical sub-skills such as decoding, word recognition, fluency, vocabulary development, and reading comprehension.

Proficiency in these areas is essential for interpreting meaning and is a strong predictor of academic success across all subjects (Amadi, 2018).

As a primary means of knowledge acquisition, reading enables individuals to access structured information, learn new concepts, and explore diverse perspectives, whether through scientific articles, historical texts, or literature. This analysis explored the potential for audio-based podcasts to foster development in the fundamentally visual and print-based domain of reading.

The COVID-19 pandemic has severely undermined the foundational expectation of reading acquisition. The global health crisis negatively impacted learning outcomes worldwide, with particularly acute effects on reading attainment and literacy in sub-Saharan Africa. In Nigeria, this situation was further exacerbated by internal insurgencies and social unrest. Consequently, the nation faces a profound learning poverty crisis in reading literacy.

The decline in literacy outcomes is well-documented. As noted by Amadi (2019), the Nigerian Education Data Survey (NEDS, 2015) revealed low reading achievement across primary education levels, with fewer than 30% of primary school pupils able to read one or more words.

The stagnating trend is corroborated by numerous scholars (Musa & Balami, 2016; Amadi, 2019; Raymond, 2019; Okika, 2021), who report consistently poor reading abilities and a

downward trend in performance on external examinations. This evidence validates a World Bank (2022) report indicating that 70% of Nigerian 10-year-olds cannot read a simple sentence or perform basic numeracy tasks.

As a result, Nigeria is far from achieving the primary education objectives of literacy and effective communication outlined in its National Policy on Education (FRN, 2013). This crisis also hinders progress toward Sustainable Development Goal (SDG) 4, which advocates for minimum proficiency in reading for every child.

Traditionally, reading proficiency is cultivated through printed texts. Yet, the emergence of digital media has expanded the avenues for acquiring information and promoting literacy (Pae, 2020; Ashfaq & Ansari, 2018; Abdullah & Husaini, 2022).

Among the digital media innovations, podcasts have gained recognition as a potential tool for enhancing learning outcomes. Newman and Gallo (2019) describe podcasting as the media landscape's "unsung hero," gradually attracting devoted listeners in educational contexts.

Despite its benefits, a significant gap exists in understanding the use of podcasts for improving reading achievement, particularly among children learning English as a second language (ESL). To address the learning poverty crisis among Nigerian primary school pupils, this study therefore investigated the effect of podcast interventions on reading achievement.

PURPOSE OF THE STUDY

The purpose of this study was to evaluate the impact of podcast-integrated instruction on the reading achievement of children learning English literacy.

RESEARCH QUESTION

The study was guided by the research question: What is the difference in the mean achievement scores of pupils who listen to podcasts during reading instruction and those who do not when controlling for pretest scores?

HYPOTHESIS

To guide the study, the hypothesis below was formulated and tested at $p < .05$.

H_{01} There is no significant difference in the mean achievement scores of pupils who listen to podcasts during reading instruction and pupils who do not.

LITERATURE REVIEW

Reading is universally recognized as a fundamental learning tool, essential for acquiring knowledge, exploring ideas, developing critical thinking, and expanding one's worldview. Its crucial role in academic success and personal development is well-established.

Amadi (2018) identifies reading as an indispensable instrument in education and society, one that facilitates learning across all dimensions of knowledge. As an active cognitive process, reading requires the learner's full engagement. When interacting with a text, the reader decodes

written symbols, comprehends meaning, and constructs mental representations (Grabe, 1988; Ajideh, 2003; Olajide, 2009).

This process involves making connections, asking questions, formulating predictions, and drawing inferences (Liu, 2010; Alvermann *et al.*, 2013). Such active engagement is critical, as it directly enhances comprehension and deepens learning, thereby improving educational achievement. Proficiency in this process is, therefore, a prerequisite for academic success, as it promotes reading achievement and enhances overall literacy outcomes.

Despite this, extensive evidence (e.g., Musa & Balami, 2016; Amadi, 2019; Raymond, 2019; Okika, 2021) indicates that Nigerian primary school pupils are performing poorly in reading. As Anidi *et al.* (2023) contend, this deficiency in reading comprehension jeopardizes pupils' overall performance in the English Language and beyond.

Scholars consistently attribute the poor reading performance of pupils to ineffective instructional methods (Amadi, 2018; Anidi *et al.*, 2023). This is exacerbated by an unproductive teaching approach that fails to foster a strong reading culture or develop essential skills (Nwosu *et al.*, 2021).

As Menakaya *et al.* (2022) argue, the inability to employ appropriate pedagogical strategies that actively engage pupils in reading adversely influences their overall performance in the English Language.

The sustainability of learning and content assimilation is fundamentally dependent on the use of effective instructional methods and materials (Patrick *et al.*, 2020). Consequently, utilizing the right strategies is paramount for ensuring pupils better understand and master the subject matter (Anidi *et al.*, 2023). Against this backdrop, podcasting is proposed as an innovative instructional approach to address poor reading abilities and remediate the learning poverty crisis.

A podcast is a digital audio file made available for download or streaming to a wide range of portable devices, including MP3 players, smartphones, computers, and tablets (Constantine, 2007; Dale & Pymm, 2009; Pratiwi, 2022; Shahrizal *et al.*, 2022).

As a form of mobile learning, a podcast allows users to listen to or view content on demand (Mohsen *et al.*, 2020). Its primary advantage is accessibility; learners can choose the time, place, and manner in which they access content (Evans, 2008; Fernandez, 2009). This flexibility makes podcasts a potent tool for educators seeking to enhance teaching and learning outcomes.

Podcasts expand the boundaries of learning by creating opportunities for education both inside and outside the classroom. As Mohsen *et al.* (2020) suggest, they function not as replacements for traditional resources, but as powerful complementary tools. This is supported by Pratiwi (2022), who asserts that podcasting is a creative technique that teachers can utilize to improve

language abilities and encourage autonomous learning.

A significant advantage, noted by Gromik (2008), is that podcasts provide learners in non-English speaking contexts with full access to authentic resources, offering a form of ‘real-life listening’ from which all foreign language learners can benefit (Abdulrahman *et al.*, 2018).

Consequently, the use of podcasts is revolutionizing the English language learning process (Ramli, 2017). Ramli further contends that podcasts offer rich sources of material for English-As-Foreign-Language contexts, aiding overall foreign language instruction. This aligns with the view of Chaves-Yuste and de-la Peña (2023), who maintain that podcasts are particularly effective in developing two key linguistic skills: listening and speaking.

A growing body of research supports the efficacy of podcasts as a valuable educational tool. Studies across various educational levels have demonstrated their positive impact on engagement, comprehension, and critical thinking—skills essential for reading proficiency.

At the preschool level, Parish-Morris *et al.* (2013) compared traditional book reading, electronic storybooks, and audio-based podcasts on vocabulary and story comprehension. Their research found that while both traditional and electronic storybook reading led to significant improvements, audio formats like podcasts also

showed value, establishing a foundation for their use in early literacy development.

In K-12 settings, the benefits of podcast integration become more pronounced. Burmark's (2009) study indicated that learners who both created and listened to podcasts demonstrated increased motivation, improved oral fluency, and enhanced reading comprehension skills. This suggests that podcasting engages learners in active learning, thereby strengthening their reading abilities.

The above correlation is further supported in language learning contexts. Lee and Warschauer (2017) investigated podcast use in a foreign language classroom and found that learners who engaged with podcast content made significant improvements in both listening and reading comprehension. Their findings indicate that podcasts enhance comprehension by providing accessible and engaging authentic language input.

Beyond comprehension, podcasts also foster higher-order cognitive skills. McTigue *et al.* (2018) examined the impact of podcasts in a university course, using a mixed-methods approach. Their results showed that podcast use promoted improved critical thinking abilities and enhanced learners' capacity to analyze and evaluate information. Since these skills are fundamental to deconstructing complex texts, the study suggests podcasts can indirectly support advanced reading comprehension.

Research further demonstrates the efficacy of podcasts in improving reading comprehension across diverse learner populations and subject areas. Zimmerman and Revere (2019), for instance, examined the impact of science podcasts on elementary school learners. Their results indicated that the treatment group, which listened to podcasts, showed significantly improved reading comprehension and acquired more content knowledge than the control group, positioning podcasts as a valuable tool for integrated learning.

Zimmerman and Revere (2019) finding is corroborated by a broader meta-analysis by Reich and Kizilcec (2020), who analyzed the effects of various digital interventions, including podcasts, on K-12 reading comprehension and found an overall positive effect. Reich and Kizilcec work suggests that the strategic incorporation of podcasts into digital learning frameworks can be an effective strategy for boosting achievement in reading comprehension.

Further supporting this conclusion, Rance-Roney (2020) specifically investigated podcasts as a novel approach for middle school learners. The study revealed that learners who engaged in regular podcast listening demonstrated higher levels of reading comprehension, vocabulary acquisition, and overall literacy skills compared to their peers. This body of evidence collectively affirms that podcasts serve as an effective supplementary tool for supporting and enhancing reading comprehension in classroom settings.

A substantial body of research confirms the efficacy of podcasts in enhancing language acquisition, particularly listening skills, in English as a Foreign Language contexts. Multiple studies demonstrate that podcast integration positively impacts academic listening skills (Wolf & McQuillan, 2020), general listening comprehension (Abdulrahman et al., 2018; Mohsen et al., 2020), and learner attitudes towards language learning (Abdulrahman et al., 2018).

The benefits extend beyond listening; research indicates podcasts are also effective tools for improving related linguistic competencies, including speaking skills (Ramli, 2017; Chaves-Yuste & de-la Peña, 2023) and overall linguistic competence. Furthermore, podcasts are recognized as an accessible and effective medium for facilitating learning, including in virtual classrooms (Pratiwi, 2022).

Collectively, these studies provide robust evidence for incorporating podcasts as a valuable educational tool within modern teaching paradigms. They highlight the potential of podcasts to enhance critical thinking, vocabulary, content knowledge, and core language skills like listening and speaking across various educational levels.

While the benefits for listening comprehension in EFL settings are well-documented, a significant research gap, however, remains regarding the direct impact of podcasts on reading achievement,

particularly for children learning to read in English as a Second Language (ESL) contexts.

This study, therefore, sought to address this gap by investigating the effects of podcasts on the reading skills of primary school pupils. The ultimate goal was to determine whether podcast-based instruction can serve as a viable strategy to mitigate the learning poverty crisis in Nigeria and contribute to the attainment of Sustainable Development Goal (SDG) 4.

THEORETICAL FRAMEWORK

This study was grounded in Paivio's (1971) Dual-Coding Theory (DCT). Although a general cognition theory, DCT has significant applications in literacy and language learning (Kanellopoulou *et al.*, 2019).

DCT posits that the human mind processes and stores information using two distinct, yet interconnected, cognitive channels: a verbal system for linguistic information (e.g., words, sounds, written text) and a non-verbal (imaginal) system for visual information and mental imagery (e.g., images, sounds, sensory experiences).

A key tenet of DCT is that information can be encoded and recalled through either channel. However, learning and memory are significantly enhanced when information is presented through both verbal and non-verbal channels simultaneously (Al-Seghayer, 2001; Paivio, 1991).

When learners engage verbal and non-verbal systems, they create robust mental connections—or dual codes—between the verbal and imaginal representations. This interconnected network facilitates deeper processing, improves comprehension, and strengthens memory recall.

In the context of this research, educational podcasts serve as a potent tool for dual coding. The verbal channel is engaged through the narration, vocabulary, and linguistic structures in the audio. Simultaneously, the rich, descriptive language and narrative storytelling in a podcast stimulate the non-verbal channel by prompting learners to generate complementary mental images and scenarios.

Just as an example, while listening to a podcast that describes a story or event, learners create mental imagery that reinforces the verbal content. This dual activation is hypothesized to enhance the processing, storage, and retrieval of reading-related skills, such as vocabulary acquisition, comprehension, and narrative understanding.

Paivio further elaborated on DCT through the concept of concreteness, which refers to the ease with which a concept can be linked to sensory experiences and mental imagery. Concrete concepts (e.g., apple, run) are more readily understood and remembered than abstract ones (e.g., justice, theory) because they activate strong perceptual associations in the non-verbal system.

DCT posits that presenting information in a concrete, multimodal manner—by combining spoken words with visual representations—synergistically improves learning outcomes. This is particularly effective in second language (L2) acquisition.

As Kanellopoulou et al. (2019) and Al-Seghayer (2001, 2016) assert, multimedia environments that integrate text, audio, pictures, and video create optimal conditions for vocabulary learning by leveraging both cognitive channels.

This theoretical framework directly supports the use of podcasts as an educational tool for reading achievement. While podcasts are inherently an auditory (verbal) medium, their efficacy can be significantly enhanced by integrating visual (non-verbal) elements. For example, pairing audio content with complementary images, diagrams, or printed transcripts provides the dual codes necessary for deeper processing.

In this study, the podcast content was designed to function as a complementary verbal text, explicitly aligned with the visual elements (e.g., graphemes, word cards, illustrations) taught in phonics lessons.

The deliberate integration of auditory narration with visual phonics components was theorized to create the concrete, multimodal experience described by Paivio, thereby facilitating greater comprehension, retention, and overall achievement in reading skills.

METHODOLOGY

This study employed a quasi-experimental design, specifically a non-equivalent, non-randomized control group design. The sample consisted of 35 Primary Two pupils, purposively selected from a single private primary school in Enugu Urban, Enugu State, Nigeria. Participants were assigned to either an experimental or a control group.

Both groups took a pre-test prior to the intervention. The experimental group received the treatment, which involved listening to British-accented podcasts three times per week in addition to their conventional phonics lessons. The control group continued with phonics instruction only. The intervention period lasted for seven weeks, after which a post-test was administered to both groups.

The data collection instrument was the Basic Reading Skills Achievement Test (BRSAT), developed by the researcher to measure pupil achievement in specific reading skills. Data generated from the pre- and post-tests were analyzed using Mean and Standard Deviation to answer the research questions. Analysis of Covariance (ANCOVA) was used to test the study's null hypothesis at a significance level of $p < 0.05$, controlling for pre-test scores.

FINDINGS

This study sought to answer one research question: *What is the difference in the mean achievement scores of pupils who listen to podcasts during reading instruction and those who do not when controlling for pretest scores?* The findings of the study in response to this question are presented in Table 1.

Table 1
Mean Reading Achievement Scores Between Experimental and Control Groups

Groups	N	Pre-test Mean \pm SD	Post-test Mean \pm SD	Gain Scores	Gain scores Difference
<i>Experiment</i>	18	36.72 \pm 10.35	58.61 \pm 8.03	21.89	7.36
<i>Control</i>	17	29.71 \pm 8.25	44.24 \pm 7.37	14.53	

Table 1 presents the pre-test and post-test mean achievement scores and standard deviations for the experimental (podcast-integrated instruction) and control (phonics-only instruction) groups. In the pre-test, the experimental group obtained a mean score of 36.72 ($SD = 10.35$), while the control group had a mean score of 29.71 ($SD =$

8.25). Following the intervention, post-test scores increased for both groups. The experimental group achieved a mean of 58.61 ($SD = 8.03$), and the control group achieved a mean of 44.24 ($SD = 7.37$). The mean gain score—calculated from the difference between pre-test and post-test results—was 21.89 for the experimental group and 14.53

for the control group, resulting in a mean difference of 7.36 in favor of the experimental group.

These results indicate that integrating podcasts into reading instruction was associated with greater improvement in pupils' reading achievement compared to phonics instruction alone. To determine whether the difference in scores was statistically significant the study tested the hypothesis below. The findings are presented in Table 2.

NULL HYPOTHESIS

H_{01} : There is no significant difference in the mean achievement scores of pupils who listen to podcasts during reading instruction and pupils who do not.

Table 2
Tests of Between-Subjects Effects
Dependent Variable: Posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
<i>Corrected Model</i>	3569.124 ^a	2	1784.562	281.244	.000	.946
<i>Intercept</i>	1603.552	1	1603.552	252.718	.000	.888
<i>Pretest</i>	1762.289	1	1762.289	277.734	.000	.897
<i>method</i>	605.289	1	605.289	95.393	.000	.749
<i>Error</i>	203.047	32	6.345			
<i>Total</i>	97065.000	35				
<i>Corrected Total</i>	3772.171	34				

a. R Squared = .946 (Adjusted R Squared = .943)

Table 2 presents the results of the analysis of covariance (ANCOVA) comparing post-test achievement scores between the experimental and control groups, with pre-test scores as a covariate. The analysis revealed a statistically significant main effect for the instructional method after controlling for pre-test differences, $F(1, 32) = 95.39$, $*p* < .001$.

Since the obtained $*p*$ -value was less than the alpha level of .05, the null hypothesis of no significant difference between the groups was rejected. This indicates that pupils in the podcast-integrated instruction group demonstrated a significantly higher mean achievement score than those in the phonics-only instruction group.

The effect size, measured by partial eta squared ($\eta^2 = .75$), is large. This indicates that approximately 75% of the variance in post-test achievement scores can be attributed to the instructional method when controlling for initial pre-test performance.

DISCUSSION

The results of this study demonstrate that integrating podcasts into reading instruction significantly improved pupils' achievement. As shown in Table 1, the experimental group (podcast-integrated instruction) obtained higher mean achievement scores than the control group (phonics-only instruction). This difference was confirmed by an Analysis of Covariance (ANCOVA), which revealed a statistically

significant main effect for the instructional method after controlling for pre-test scores (Table 2).

This study's findings align with and extend a significant body of research on the efficacy of podcasts in language education. They corroborate studies that have demonstrated the positive impact of podcasts on listening comprehension (Abdulrahman et al., 2018; Morteza & Leila, 2020; Ramli, 2017; Wolf & McQuillan, 2020) and affirm their utility as an accessible and effective instructional medium (Pratiwi, 2022).

Furthermore, the results consolidate evidence from recent studies indicating that podcast exposure also benefits reading comprehension and broader literacy skills. This convergence with the work of Lee and Warschauer (2017), Zimmerman and Revere (2019), Reich and Kizilcec (2020), and Rance-Roney (2020) strengthens the claim that podcasts can enhance vocabulary acquisition, reading comprehension, and overall literacy outcomes.

Theoretically, the findings provide empirical support for Paivio's (1971, 1991) Dual-Coding Theory. The significant gains observed in the experimental group can be attributed to the strategic integration of podcast content (auditory/verbal channel) with the visual elements of phonics instruction (visual/non-verbal channel). This multimodal approach created the "dual codes" essential for deeper processing,

thereby facilitating enhanced learning and achievement, particularly in an ESL context.

The significant improvement in reading achievement demonstrates that podcast-integrated instruction is an innovative pedagogical tool with considerable potential for mitigating the learning poverty crisis among children learning to read in ESL contexts.

By providing an effective and scalable method for improving foundational literacy skills, podcasts can directly facilitate the attainment of Sustainable Development Goal (SDG) 4, which advocates for inclusive and equitable quality education.

This study confirms the assertions of Ashfaq and Ansari (2018) and Abdullah and Husaini (2022) that digital media like podcasts present new opportunities to promote literacy and scale up foundational learning.

Furthermore, the accessibility of podcasts extends learning beyond the classroom, fostering greater parental involvement in literacy education and enabling the kind of creative, out-of-school language practice endorsed by Pratiwi (2022).

Ultimately, the positive outcomes observed confirm that podcasts are a powerful tool for consolidating literacy learning. They offer a practical, engaging, and effective strategy for enhancing reading achievement and addressing critical gaps in global education.

CONCLUSION

Based on the findings of this study, it is concluded that podcast-integrated instruction significantly facilitates the development of reading skills in learners. The significantly higher achievement scores of the experimental group demonstrate that a combined approach of podcasts and phonics is a more effective mode of teaching reading than phonics instruction alone.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

1. Educational stakeholders—including the Federal and State Ministries of Education, the Teaching Service Board, Local Education Authorities, the Universal Basic Education (UBE) commission, and private school proprietors—should integrate podcasting technology into reading instruction curricula. This strategy presents a viable method for alleviating the learning poverty crisis and facilitating the attainment of Sustainable Development Goal (SDG) 4.
2. The aforementioned bodies should organize workshops and seminars to train in-service teachers and parents on the development and use of podcasts as an educational tool for improving literacy, particularly reading skills.
3. The methodology for developing and implementing podcast-based literacy instruction should be incorporated into the

teacher education curriculum. This will ensure pre-service teachers are adequately prepared to utilize this technology effectively in their future classrooms.

4. Non-governmental Organizations (NGOs) and donor agencies are encouraged to support this initiative by donating necessary technology, such as tablets, MP3 players, and recording equipment, to facilitate resource development and classroom implementation.

LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The generalizability of these findings is limited by the study's sample size and scope. Consequently, the results should be interpreted with caution. To build upon this research, future studies should utilize a larger sample size and employ longer intervention periods to further validate the efficacy of podcasts for improving reading literacy.

Additionally, research investigating teachers' perceptions and attitudes towards integrating podcasts into literacy instruction is essential for understanding the practical challenges and facilitators of implementation.

REFERENCES

1. Abdullah N.A.B. and Husaini H. (2022). The influence of digital reading habits on learners' performance at vision college: A conceptual framework. *Journal of Information and Knowledge Management (JIKM)*, 12(1), 100-109.

2. Ajideh, P. (2003). Schema Theory-Based Pre-Reading Tasks: A Neglected Essential in the ESL Reading Class. *The Reading Matrix*, 3 (1), 1-14.
3. Alvermann, D.E., Unrau, N.J., and Ruddel, R.B. (2013). Models of reading and writing process. In Alvermann D.E., Unrau, N.J., and Ruddell, R.B. (eds). *Theoretical Models and Processes of Reading* 11th edition. <http://www.reading.org/Libraries/books/IRA-710-sections3-intro.pdf>
4. Al-Seghayer, K. (2001). The effect of multimedia annotation modes on L2 vocabulary acquisition: A comparative study. *Lang. Learn. Technol.*, 5, 202–232.
5. Al-Seghayer, K. (2016). Celebrating the story of my first contribution to call. *Lang. Learn. Technol.*, 20, 179–184
6. Amadi, E.A. (2018). *Effects of two phonics instructional methods on primary school pupils' achievement and interest in Reading*. (Unpublished doctoral dissertation). University of Nigeria Nsukka, Nsukka.
7. Amadi, E.A. (2019). Effects of two phonics instructional modes on English as second language learners' achievement in reading. *Studies in English Language Teaching* 7(2), 236-245. <http://dx.doi.org/10.22158/selt.v7n2p236>
8. Anidi, A.C., Obidike, D.N. & Anyachebelu, F.E. (2023). Effect of direct instruction on primary school pupils' reading comprehension achievement in Awka South Local Government Area of Anambra. *Journal of Educational Research and Policy Studies* 16(2), 30-43. <https://unijerps.org>
9. Ashfaq H. & Ansari M.N. (2018). Impact of online reading on skills of professionals. *Library Philosophy and Practice (e-journal)*.1753. <https://digitalcommons.unl.edu/libphilprac/1753>
10. Abdulrahman, T. Basalamah, N. & Widodo, M. R. (2018). The impact of podcasts on EFL learners' listening comprehension. *International Journal of language Education*, 2(2), 23-33. DOI: 10.26858/ijole.v2i2.5878
11. Burmark, L. (2009). Podcasting K-12: A Technology Integration Analysis. *Journal of Research on Technology in Education*, 42(4), 447-465.
12. Chaves-Yuste B. and de-la Pena C. (2023). Podcasts' effects on the EFL classroom: a socially relevant intervention. *Smart Learning Environments*, 10(20), 1 - 18. <https://doi.org/10.1186/s40561-023-00241-1>
13. Constantine, P. (2007). Podcast: Another Source for Listening Input. *The Internet TSEL Journal*, 13 (1). <http://iteslj.org/Techniques/Constantine-PodcastListening.html>.
14. Dale, C. & Pymm, J. M. (2009). Podagogy: The iPod as a learning

- technology. *Active Learning In Higher Education*, 10(1), 84-96.
15. Evans, C. (2008). The effectiveness of m-learning in the form of podcast revision lectures in higher education. *Computers & Education*, 50, 491-498. <https://doi.org/10.1016/j.compedu.2007.09.016>
16. Federal Republic of Nigeria. (2013). *National Policy on Education*. NERDC Press.
17. Fernandez, V., Simo, P., & Sallan, J. (2009). Podcasting: A new technological tool to facilitate good practice in higher education. *Computers & Education*, 52 (3), 385-392.
18. Grabe, W. (1988). Current development in second language reading research. *TESOL Quarterly*, 25, 375-406.
19. Gromik, N. (2008). EFL learner use of podcasting resources: A pilot study. *The JALT CALL Journal*, 4(2), 47-60.
20. Kanellopoulou, C., Kermanidis, K. L. and Giannakouloupoulos, A. (2019). The Dual-Coding and Multimedia Learning Theories: Film subtitles as a vocabulary teaching tool. *Education Sciences*, 9(2), 1-13 doi:10.3390/educsci9030210
21. Lee, E., & Warschauer, M. (2017). Podcasting in the Foreign Language Classroom: Impact on Learner Learning and Satisfaction. *Language Learning & Technology*, 21(3), 130-150.
22. Liu, F. (2010). A short analysis of the nature of reading. *English language Teaching*, 3 (3), 152- 157.
23. McTigue, E. M., Washburn, E. K., & Cooter, R. B. (2018). Podcasts and the enhancement of learner critical thinking: A mixed methods exploration. *Tech Trends*, 62(1), 48-55.
24. Menakaya, C. M., Uloh-Bethels, A. C., Nwafor, C. K., Ossai, R. C., Onuorah, A. R. and Okon, O. E. (2022). Effect of Cooperative Learning Method on Interest in English Reading Comprehension in Nsukka Education Zone of Enugu State, Nigeria. *Webology*. 19(3), 723-736.
25. Mohsen F., Salah I. G., Morteza B. & Leila K. L. (2020). Investigating the effect of using educational podcasts on listening comprehension of language learners. *Randwick International of Education and Linguistics Science (RIELS)*, 1 (1), 117-122. <http://www.randwickresearch.com/index.php/rielsj>
26. Musa, A.K.J. & Adamu, Z.B. (2016). Effects of phonological awareness training on the reading performance of children with dyslexia in primary schools in Maiduguri metropolis, Borno State, Nigeria. *American Journal of Educational Research* 4(15), 1078-1085. <http://doi:1012691/education-4-15-5>.

27. Newman, N., & Gallo, N. (2019). News podcasts and the opportunities for publishers.
28. Nwosu, K.C., Unachukwu G.C., & Hickman, G.P. (2021). Cooperative learning and teacher- directed learning classrooms:places for the development of metacognitive skills for reading proficiency. *Electronic Journal of Research in Educational Psychology*. 19(53), 19-50
<http://doi:10.25115/ejrep.v19i53.3352>
29. Okika, L. C. (2021). *Effect of literature circle and peer tutoring on the reading comprehension achievement of primary school pupils*. (Unpublished Ph.D Dissertation) Nnamdi Azikiwe University.
30. Olajide, S.B. (2009). Types of reading. In V.A. Alabi and S.T Babtunde (Eds.). *The Use of English in Higher Education*. University of Ilorin Publications.
31. Pae, H. K. (2020). Script effects as the hidden drive of the mind, cognition, and culture.
<http://www.springer.com/series/7206>
32. Paivio, A. (1971). *Imagery and Verbal Processes*. Psychology Press.
33. Paivio, A. (1986). *Mental Representations: A Dual Coding Approach*. Oxford University Press.
34. Paivio, A. (1991). Dual coding theory: Retrospect and current status. *Canadian Journal of Psychology/Revue canadienne de psychologie*, 45(3), 255-287.
35. Patrick, C. P., Uloh-Bethels, A. C. and Ukwueze, P. C. (2020). Tailoring instructional process towards sustainability in the teaching and learning of English language in Enugu State, Nigeria. *Review of Education, Special Edition*. 32(2), 252-263.
36. Pratiwi, S. (2022). The use of podcasts for listening comprehension. *Journal of English Language and Education*, 7 (2), 77 – 83.
<https://doi.org/10.31004/jele.v7i2.276>
37. Parish-Morris, J., Mahajan, N., Hirsh-Pasek, K., & Golinkoff, R. M. (2013). Once upon a time: Parent-child dialogue and storybook reading in the electronic era. *Mind, Brain, and Education*, 7(3), 200-211.
38. Ramli (2017). The Use of Podcast to Improve Learners' Listening and Speaking Skills for EFL Learners. *Advances in Social Science, Education and Humanities Research*, 145, 189-194.
39. Rance-Roney, J. A. (2020). Podcasts: A Novel Approach to Increasing Reading Comprehension. *Journal of Media Literacy Education*, 12(1), 118-132.
40. Raymond, E. (2019). Factors responsible for the poor reading achievement of pupils in public primary schools from teachers' perspectives: A case study of Yola South and North Local Government Area of Adamawa State. *International Journal of Research – Granthaalayat* 7(5), 208-229.

<https://doi.org/10.2912/granthaalaya.v7.i5.2019.841>

41. Reich, S. M., & Kizilcec, R. F. (2020). Supporting reading comprehension with digital interventions: A meta-analysis. *Review of Educational Research*, 90(5), 695-734.
42. Shahrizal A.Z.S.A, Rahmatullah B., Ab Majid M.H., Samuri S.M., Hidayanto A.N., Qahtan M., Yas Q.M. & Purnama S. (2022). A systematic literature review on the use of podcasts in education among university learners. *AJTLHE*, 14(1), 222-236.
<http://dx.doi.org/10.17576/ajtlhe.1401.2022.10>
43. Wolf, C. A., & McQuillan, P. J. (2020). Leveraging podcast listening to improve academic listening and reading among English as a foreign language learners. *Journal of Educational Technology Systems*, 49(4), 418-441.
44. World Bank (2022). Press Release. <https://www.worldbank.org/en/news/press-release/2022/06/23/>
45. Zimmerman, H. T., & Revere, L. (2019). Listening to Learn: Using Podcasts to Enhance Learners' Knowledge and Reading Comprehension. *The Reading Teacher*, 73(1), 89-97.