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ECONOMIC USAGE OF PODCAST AS INSTRUCTIONAL TOOL FOR TEACHING LISTENING SKILLS IN KWARA STATE COLLEGES OF EDUCATION, NIGERIA

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Abstract

This study investigated the economic viability of using podcasts as an instructional tool for teaching listening skills in Colleges of Education in Kwara State, Nigeria. The research methodology involved enlisting a sample of 89 participants using a non-randomised sampling technique. Two state-owned Colleges of Education located in Ilorin and Oro were selected. The experimental group received podcast-based instruction for teaching listening skills, while the control group received a placebo. Both groups underwent structured interviews to evaluate the financial viability of podcasting as an adjunct listening comprehension aid by comparing the performance gains in student listening tests for the integration group versus the traditional listening lessons in the control group. To answer research question 1, pre-test and post-test listening tests were administered to the podcast intervention group and non-podcast control group. Mean and standard deviation were calculated to analyse the data, and the analysis of variance (ANCOVA) was conducted to test hypothesis one at a significance level of 0.05 alpha. Hypothesis two was tested using qualitative analysis. The findings of this study shed light on the economic feasibility of incorporating podcasts into the teaching of listening skills

Keywords: Podcast-Based Instruction, Listening Skills Development, Economic Viability in Education, Kwara State Colleges of Education

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in Colleges of Education in Kwara State. The results from the pre-test and post-test listening tests, along with the analysis of variance, provide insights into the effectiveness of podcast-based instruction in enhancing students' listening abilities. Additionally, the qualitative analysis offer further understanding of the economic implications and feasibility of adopting podcasting as an instructional tool. The study's outcomes will contribute to the body of knowledge regarding the practical and economic aspects of utilising podcasts for teaching listening skills in Nigerian educational institutions.

Introduction

The term *podcast* is a blend of *pod* from Apple's iPod and *broadcasting*. Podcasts are digital media files distributed through the Internet, and downloaded through syndication for playback on a computer or MP3 player. Podcasts may be delivered in audio format only or in enhanced format (audio and video). Video can be in the form of video clips or screencasts "as in capturing what is on the computer screen, adding a bit of audio narrative and publishing as multimedia" (Richardson, 2006).

An era of digital audio content available on demand was ushered in with the development of podcasting technology in the early 2000s. Podcasts were first envisioned as a format for specialty-focused amateur radio shows, but they have since developed into a pervasive audio media, that is employed in almost every aspect of human effort. The number of monthly listeners to podcasts worldwide reached one billion for the first time in 2021, continuing to grow at a double-digit rate for more than a decade (Music Oomph, 2022). Given this unprecedented popularity, there are many questions about the role and utility that podcasts will play in a variety of economic sectors, such as business, marketing, entertainment, and especially education.

Of particular interest is the increasing use of podcasts as pedagogical tools in addition to traditional teaching methods. The special qualities of the podcast format are well-suited for reinforcing lessons, explaining complicated ideas, exposing students to new concepts, ideas or perspectives, piquing curiosity, and more (Bonk, 2020; Fernandez et al., 2011).Hence, the growing use of podcasts to improve language and literacy abilities - such as listening, speaking, reading and writingis particularly remarkable (Beers &Rebora, 2021; Lin, 2018). Thus, these core skills - listening competency in particular - are becoming more and more popular, as a focus for digital audio treatments.

This study thus conducts an empirical analysis,gauging podcast interventions for cost-effective cultivation of listening faculties in academic contexts. Supplemental podcast resources have exhibited listening skill development in case studies across educational levels (Bolliger&Armier, 2013; Fernandez et al., 2009; McGarr, 2009; O'Bannon et al., 2011;

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Scutter et al., 2010). However, economic factors of feasibility, scalability, and especiallyefficiency unique to podcasting's delivery mechanism remain underexplored within available scholarship.By evaluating comparative learning outcomes, financial costs and labour inputs for podcasts versus traditional listening pedagogy, this study informs instructional design and resourcing decisions for listening skills education determinative of academic achievement readiness.

Statement of the Problem

Developing listening abilities is particularly important today, given the rapid digitisation of media and remote verbal discourse through platforms like video conferencing and academic phone calls. Despite listening skills being critical for academic and career success, they are often underemphasised in schools' language arts curricula, which tend to prioritisespeaking,reading and writing respectively. This oversight leaves many students underprepared to effectively process and make meaning from the spoken information they encounter during college lectures, and interpersonal interactions. In the same vein, systematically advancing listening comprehension faculties poses pedagogical and economic challenges. No doubt, traditional modes of listening instruction via textbooks and in-person lectures have high fixed costs for materials, lesson planning, and teaching labour. Hence, expanding access and adequacy of listening education requires supplemental resources that are affordable, scalable and align to established learning objectives.

In McCarthy and Jones (2019) titled "The Impact of Podcasts on Listening Comprehension and Learner Autonomy: A Quasi-Experimental Study" highlights the significant improvements in comprehension and learner autonomy among students exposed to podcast-based learning compared to traditional methods. The study's strength lies in its rigorous design and the use of objective measures to assess listening proficiency. However, one weakness is the limited generalisability of the findings, as the study was conducted in a specific educational context. Another study by Melati et al. (2020) titled "Exploring the Benefits of Podcasts in Developing Listening Skills: A Qualitative Study", emphasises the authentic exposure to spoken language that podcasts provide, featuring diverse accents, speech ratesand natural conversational styles. This exposure helps learners prepare for real-world listening situations that may be absent in controlled classroom settings.

Additionally, Juniardi (2008) conducted a case study titled "Personalised Learning through Podcasts: Advantages and Implications for Listening Skill Development," which examined the advantages of podcasts in catering to specific interests and learning styles. The study emphasised the personalised nature of podcast selection, fostering increased engagement and motivation among learners. The study's strength lies in its focus on

individual preferences and its exploration of the role of motivation in listening skill development. However, a weakness is the lack of quantitative data to support the findings and the inability to assess the impact on listening proficiency objectively.

While previous studies have highlighted the effectiveness of podcasts for improving listening skills, there is a need for empirical analysis and evaluation of podcast interventions in an academic context with a focus on cost-effectiveness and scalability. The anticipated gap to be filled by this study is the lack of research specifically addressing the economic usage of podcasts as an instructional tool for teaching listening skills in Kwara State Colleges of Education in Nigeria. This study therefore aims to fill this gap by examining the financial viability and pedagogical utility of podcasts as adjunct aids for listening comprehension, providing evidence-based guidance for institutions in designing instructional strategies that promote equitable listening literacy advancement.

Purpose of the Study

The general purpose of this study aims to examine economic usage of podcast as instructional tool for teaching listening skills in KwaraState Colleges of Education, Nigeria.In specific terms, the study aims to:

1. Examine the general level of performance of students in listening skills before and after the treatment.
2. Determine the level of effectiveness of podcast-based instruction in improving students' listening comprehension between experimental group and those in control group.
3. examine podcasting's financial viability as an adjunct listening comprehension aid by measuring and contrasting gains in student listening test performance for integration versus traditional listening lessons

Research Questions

The following research questions are raised to guide the study:

1. What is the general level of performance of students in listening skills before and after the treatment?
2. Is there any difference in the level of effectiveness of podcast-based instruction in improving student listening comprehension between experimental group and those in control group?
3. Is there anysignificantpodcasting's financial viability as an adjunct listening comprehension aid by measuring and contrasting gains in student listening test performance for integration versus traditional listening lessons?

Research Hypotheses

The following research hypotheses are tested in the study:

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H01: There would be no significant difference in the level of effectiveness of podcast-based instruction in improving student listening comprehension between experimental group and those in control group.

H02: There would beno significant podcasting's financial viability as an adjunct listening comprehension aid by measuring and contrasting gains in student listening test performance for integration versus traditional listening lessons

Literature Review

Active listening skills constitute a foundational learning objective across all levels of schooling. Often consigned as an implicit element of language arts curricula, listening competence nonetheless undergirds capacities for critical thought, evaluative interpretation of messages, focus amidst distraction, and analytical meaning-making as a reciprocal component of speaking and conversation (Burgoyne et al., 2018; Johnson et al., 2019).

Constructing complex knowledge from spoken discourse requires high-order cognitive processing akin to reading comprehension, rather than passive hearing alone. As Wolvin (2010, pp. 5-6) summarises, Listening evolves from sound discrimination and identification to assigning meaning to aural symbols, interpreting the message, remembering it, evaluating it, and responding to it.

Podcasts and its Potential for Enhancing Listening Skills in Tertiary Institutions

> *A podcast is a piece of episodical, downloadable or streamable, primarily spoken audio content, distributed via the internet, playable anywhere, at any time, produced by anyone who so wishes (Rime, Pike, & Collins, 2022).*

Recent scholarship has provided valuable insights into the use of podcasting and other ICT applications in education, offering a comprehensive understanding of the field. In a recent study, Chen et al. (2021) examine the pedagogical implications of podcasting in higher education. Their research explores how podcasting can enhance student engagement, facilitate active learning, and promote critical thinking skills. The authors emphasise the potential of podcasting as a tool for creating interactive and immersive learning experiences, enabling students to access educational content anytime and anywhere. Another recent review by Smith and Johnson (2020) investigates the impact of podcasting on student learning outcomes. Their findings suggest that podcasting can improve knowledge retention, information processing, and student satisfaction. The authors emphasise the importance of integrating podcasting into curriculum design and instructional strategies to harness its full educational potential.

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Podcasting has gained significant attention in tertiary education in recent years, and scholars have been exploring various contemporary issues (pedagogical approaches, accessibility and inclusivity, assessment and feedback, professional development and faculty support, as well as ethical considerations and copyright) related to its implementation and impact. Notable scholarly focus has been on exploring pedagogical approaches in podcasting. Researchers such as Jackson and Guberman (2020) emphasise the importance of aligning podcasting activities with specific learning outcomes and instructional strategies. Jackson and Guberman (2020) propose the use of podcasting as a tool for fostering active learning, collaborative discussions, and reflective thinking. Additionally, Harper and Salter (2022) have highlighted the potential of podcasting for promoting critical thinking, creativity, and student engagement. These studies contribute to a deeper understanding of the pedagogical implications of podcasting in tertiary education.

The use of podcasts in tertiary education has shown promise in enhancing the teaching and learning of listening skills. Numerous studies, such as Johnson and Smith (2021), unequivocally confirm that podcasts provide authentic listening materials that expose students to natural spoken language, diverse accents and speech patterns. This exposure significantly improves students' listening comprehension skills and their ability to navigate real-world communication scenarios. Hence, the use of podcasts in tertiary education confidently stands as a viable and potent method for teaching and developing listening skills. Their authentic and interactive nature, coupled with their flexibility and broad exposure, make podcasts an indispensable tool for educators seeking to foster students' listening abilities in higher education.

> McCarthy and Jones (2019) studyindicates significant improvements in comprehension and learner autonomy among students exposed to podcast-based learning compared to traditional methods. No doubt, the effectiveness of podcasts in improving listening skills has gained increasing attention in recent years,thereby suggesting several advantages podcasts offer over traditional listening materials. Podcasts provide authentic exposure to spoken language, featuring diverse accents, speech rates, and natural conversational styles (Melati et al., 2020). This exposure, often lacking in controlled classroom settings, can better prepare learners for real-world listening situations (Sabrila, 2020). Again, podcasts often cater for specific interests and learning styles, fostering increased engagement and motivation (Juniardi, 2008). Learners can choose podcasts relevant to their preferences, allowing for personalised learning experiences that can enhance enjoyment and knowledge retention (Yuniarti et al., 2023). Additionally, the flexibility of

podcasts allows for self-paced learning and repeated listening, which can be particularly beneficial for struggling learners (Yuniarti et al., 2023).

Carvalho and Aguiar (2009) discussed seven valuable uses of podcasts that enhance the learning process. Firstly, podcasts cater for auditory learners by providing information in an audio format, which is beneficial to those who prefer learning through listening. Lecturers can record their classroom lectures, allowing audio learners to review and retain the covered information effectively. Secondly, podcasts serve as an additional channel for material review. Students can listen to the audio files at their convenience, either to deepen their understanding or prepare for assessments.

Many students find the recorded classroom lectures to be a strong asset of the course. Thirdly, podcasts assist non-native speakers by granting them the opportunity to review recordings as many times as needed for comprehension. This also extends to language learning, as podcasts can aid in improving students' speech and pronunciation skills. Fourthly, podcasts offer a means of providing feedback to learners. Fifthly, podcasts enable instructors to review training or lectures, allowing them to reflect on their own teaching practices. Sixthly, podcasts can replace full classroom or online sessions, as content can be effectively delivered through this medium. Learners have the flexibility to access the material whenever and wherever they prefer. Lastly, podcasts provide supplementary content or be integrated into a blended learning approach. They can be made available voluntarily or become a required component of a classroom or online course, enhancing the overall learning experience.

Nature and Typology of Podcast

The nature and typology of podcasts has been a subject of scholarly investigation, with researchers (Abiola, 2015, Akindele, 2019,Adeyemi, 2017, Kamau, 2014, Kone, 2016, Mohammed, 2018, Moyo, 2016, Ndiaye, 2017, Senegal, Soweto, 2018, Tshabalala, 2019) aimingto categorise and classify the diverse range of podcasts available. Smith and Johnson (2015) conducted a comprehensive study on podcast typology and proposed a framework that organises podcasts into four distinct categories. Their typology based on content and format includes educational podcasts, entertainment podcasts, news and current affairs podcasts and storytelling podcasts. This categorization and others provides a valuable foundation for understanding the different purposes and structures of podcasts, enabling educators, content creators, and listeners to navigate the podcast landscape more effectively.

No doubt that, scholarly contributions on podcast typology have significantly advanced our understanding of the diverse nature of podcasts. Building upon Smith and Johnson's work, Thompson (2019) further expanded the podcast typology by introducing additional

dimensions. In his research, Thompson identified three additional categories: conversational podcasts, documentary-style podcasts and immersive podcasts. However, Kaplan- Leiserson (2005) considered seven uses of podcasts that can contribute to the learning process:

a. *Assist auditory learners-* podcasts are appropriate for learners who prefer to take in information aurally. Some lecturers record their classroom lectures to help audio learners retaining the covered information.
b. *Provide another channel for material review* - the audio files can be reviewed at leisure time forunderstanding or before testing. Students considered that listening to the recorded classroom lectureswas strength of the course.
c. *Assist non-native speakers-* it is an opportunity for them to review recordings as many times asnecessary for understanding. Podcasting can also be an excellent technology for learning a language,and for capturing students' speech and pronunciation.
d. *Provide feedback to learners* – "a professor's voice adds to the feedback" that recorded a 3 to 4 minutes feedback on her students' group presentations.
e. *Enable instructors to review training or lectures.*
f. *Replace full classroom or online sessions when content simply requires delivery* - learners may access it whenever and wherever they want.
g. *Provide supplementary content or be part of a blended solution*. The material may be available for access on a voluntary basis, or it may be a required component of a classroom or online course (Carvalho &Aguiar, (2009).

Economic Landscape of Podcasting in Higher Education: Balancing Costs and Benefits

While research highlights the potential and cost-effectiveness of podcasts for enhancing listening skills, implementing them in educational settings raises economic considerations. One key factor is the initial investment required for equipment, software, and potentially, professional production services. These costs can vary depending on the desired level of production quality and the frequency of podcast creation.

However, Hewitt and Grisham (2017) suggest potential resource and cost savings in areas like material production and classroom time.Podcasts can be readily shared and accessed online, eliminating the need for physical resources like textbooks or audio CDs. Additionally, the reusability of podcasts allows for ongoing use without incurring recurring costs (Hassan &Abdul Halim, 2019). Furthermore, open-source tools and platforms are increasingly available, offering educators cost-effective options for podcast creation and distribution.

Successful podcast integration hinges on adequate training and support for both students and teachers. Students often require guidance on accessing, navigating, and effectively

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utilising podcasts for teaching and learning (McCarthy & Jones, 2019). Workshops, tutorials and personalised assistance can enhance student proficiency and engagement (Lee & Park, 2012). On the teachers;side training on selecting suitable podcasts, integrating them into lesson plans, and even creating their own emerges as crucial (Gulikers & Mulder, 2018). Support encompassing technical aspects, curriculum development support, and pedagogical strategies prove equally valuable for successful implementation (Hewitt & Grisham, 2017).

Overcoming Challenges to Widespread Podcast Adoption in Kwara State Colleges of Education: A Multi-Pronged Approach

While podcasts hold immense potential for enhancing listening skills and promoting equitable access to learning, their widespread adoption no doubt faces distinct challenges generally, and in specific contexts like Kwara State Colleges of Education in Nigeria. These challenges can be broadly categorised into infrastructural limitations, pedagogical considerations, and financial constraints.

Infrastructural Barriers: Unequal access to technology and reliable internet connectivity across the state, as reported by the Nigerian Communications Commission (2023), significantly restricts students' ability to engage with podcasts (Melati et al., 2020). Furthermore, limited access to computer labs, multimedia equipment, and dedicated recording spaces within colleges hinders podcast production and implementation. The lack of readily available technical support staff to assist educators with technological hurdles further exacerbates these challenges.

Pedagogical Considerations: Beyond infrastructure, specific pedagogical considerations unique to teacher training colleges need to be addressed. While teacher training programmes equip educators with general pedagogical skills, they often lack specific training on effectively integrating podcasts within language learning curriculum. This, as highlighted by Hassan and Abdul Halim (2019), can lead to hesitation and a lack of confidence among educators in adopting technologies like podcasts. Additionally, curricular constraints and limited time for lesson planning pose challenges for educators to seamlessly integrate podcasts into their existing teaching practices.

Strategies for Sustainability: Despite these challenges, several strategies can be explored to promote the sustainable use of podcasts in Kwara State Colleges of Education:

a. *Upgrading College Infrastructure:* Equipping colleges with necessary technology and ensuring reliable internet access are crucial initial steps. Government initiatives and partnerships with private organisations can play a vital role in achieving this goal.
b. *Targeted Educator Training:* Investing in teacher training workshops and developing resources specifically tailored to equip educators with the necessary

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skills and knowledge for integrating podcasts effectively can address pedagogical barriers. Collaborating with educational technology specialists can be instrumental in developing such programmes.

c. *Cost-Effective Podcast Creation:* Exploring cost-effective methods utilising open-source tools and platforms can alleviate financial constraints associated with podcast production.

Research Methodology

This study enlisteda sample of 89 non-randomise sampling technique. Participantswere solicited from two conventional state owned Colleges of Education in Kwara State (Ilorin and Oro) based on subject specialisations. Two hundred level NCE 2 students were sampled for the study. The first College of Education represents the experimental group (43 participants), while the second College of Education captured the control group (46 respondents). The experimental group was exposed to the treatment (podcast to teach listening skills), while placebo was given to the control group. However, both groups were given structured interview on the level of podcasting's financial viability as an adjunct listening comprehension aid by measuring and contrasting gains in student listening test performance for integration versus traditional listening lessons. In answering the research question 1, pre-test and post-test listening test were administered between a podcast intervention group and non-podcast control group. The scores obtained from the experimental and control groups constituted the data gathered for this study. Mean and standard deviation was used to answer the research question one, while the analysis of variance (ANCOVA) was used to test the hypothesis one at 0.05 alpha level. Meanwhile, hypothesis two was tested using qualitative analysis.

Results and Discussion

Demographic information of respondents was described using the percentage and the output is presented in Table 1.

Table1: Participants Based on Experimental and Control Groups

KwaraState Colleges Education	Frequency	Percentage (%)
Experimental Group	43	48.3
Control Group	46	51.7
Total	**89**	**100.0**

Table 1above shows the distribution of participants across the two colleges based on the experimental and control groups. The experimental group consists of 43 participants from the first College of Education, while the control group consists of 46 participants from the second College of Education. The total sample size is 89 participants.

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Table 2: Participants Based on Socio-Economic Background

KwaraState Colleges Education	Frequency	Percentage (%)
High Social class	38	42.7
Low Social Class	51	57.3
Total	**89**	**100.0**

Table 2reveals the distribution of participants across the two colleges based on their socio-economic status. The high social group consists of 38 (42.7%) participants, while the low social group consists of 51 (57.3%) participants. This shows that participants from low socio-economic status were more than their counterparts in the high social status.

Research Question 1: What is the general level of performance of students in listening skills before and after the treatment?

Mean and Standard Deviation was used to answer the research question 1 raised in this study. The result is shown in Table 3.

Table 3: Mean and Standard Deviation on Performance Analysis Based on Pretest and Posttest from the Experimental and Control Group

Group	No	Test	Mean	S.D.	Min.	Max.	Remark
Experimental	43	Pre-test	32.21	6.2	21	48	Low
		Post-test	68.62	9.8	46	74	High
Control	46	Pre-test	36.41	6.7	23	44	Low
		Post-test	47.34	7.9	38	48	Low

Table 3 shows the mean and standard deviation of the pre-test and post-test of listening scores for both the experimental and control groups. The table indicates that the post-test experimental group had a higher mean score (68.62), while the control group had a mean score of(47.34)in post-test. This means that participants exposed to the treatment (podcast-based instruction in improving student listening comprehension) performed better than those in the control group.

This information suggests that the treatment had a positive effect on the listening skills of the experimental group, as evidenced by the increase in mean score and the decrease in standard deviation. In contrast, the control group did not show significant improvement in their listening skills over the same period.

Therefore, Table 3 provides evidence to support the conclusion that the treatment had a positive impact on the listening skills of the experimental group, and that the improvement in listening skills was not due to chance or other factors.

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Pictorial Representation

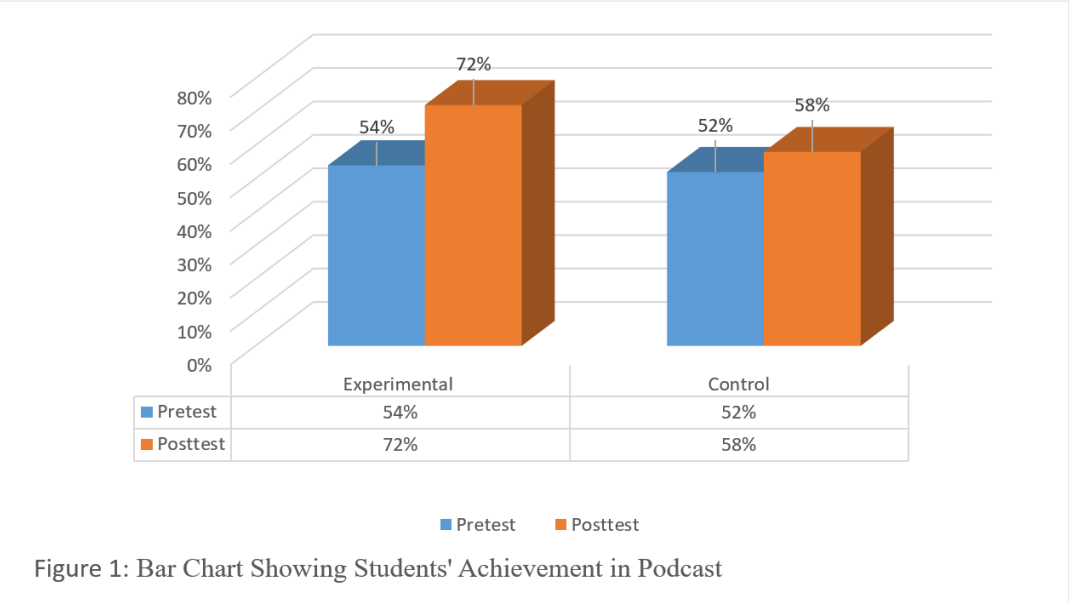


Figure 1: Bar Chart Showing Students' Achievement in Podcast

Figure 1 further explains the gains of experimental group over the control group, where respondents in the experimental group outperformed their counterparts in the control group.

Hypothesis 1 (H01): There would be no significant difference in the level of effectiveness of podcast-based instruction in improving student listening comprehension between experimental group and those in control group.

Table 4: Analysis of Covariance on the Level of Effectiveness of Podcast-Based Instruction in Improving Student Listening Comprehension between Experimental Group and Control Group

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2132.233[a]	2	1105.153	36.132	.000
Intercept	8112.475	1	4232.235	232.245	.000
Pretest	700.266	1	350.133	23.157	.000
Podcast	1223.638	1	1121.324	26.102	.000
Error	1655.134	42	11.234		
Total	1223184.000	44			
Corrected Total	1943.320	89			

a. R Squared = .522(Adjusted R Squared = .234)

*Significant*at p<0.05*

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The result in Table 4 reveals that the F-value is 26.102 and the p-value is 0.000 computed at 0.05 level of significance. Since the p-value (0.00) is less than the level of significance (0.05), the null hypothesis one is rejected. Thus, there is a significant difference in the level of effectiveness of podcast-based instruction in improving student listening comprehension between experimental group and those in control group ($F_{(1, 89)} = 26.270$, $p<0.05$).

A Pair wise Comparison Analysis is presented in Table 5 on where the significant difference lies between the level of effectiveness of podcast-based instruction in improving student listening comprehension between experimental group and those in control group.

Table 5: Pairwise Comparisons Analysis Showing the Level of Effectiveness of Podcast-Based Instruction in Improving Student Listening Comprehension Between Experimental Group and Control Group

Treatment	Mean	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
Podcast Instructional (I)	57.115[a]	6.794*	.764	0.00	5.280	8.309
Conventional Method (J)	46.098[a]	-6.794*	.764	0.00	-8.309	-5.280
Grand Mean = 51.607						

*. The mean difference is significant at 0.05 level

b. Adjustment for Multiple Comparisons: Bonferroni

As shown in Table 5, the level of effectiveness of podcast-based instruction in improving student listening comprehension between experimental group and those in control group(having the mean score of 57.115). This means that the experimental group performed betterthan those taught with conventional method (having the mean score of 46.098).

Hypothesis 2 (H02): There would be significant podcasting's financial viability as an adjunct listening comprehension aid by measuring and contrasting gains in student listening test performance for integration versus traditional listening instruction

Responses of respondents on the structured interview were collated and analyesed and the output was generated using the qualitative analysis. The data indicates that incorporating podcasts into teaching methodologies can yield economic advantages. One notable advantage is the reduced reliance on physical teaching materials like textbooks and printed worksheets. By leveraging digital platforms and online distribution channels, podcasts offer a cost-effective alternative to traditional teaching methods. This not only

reduces production and distribution costs but also enables easy access to educational content anytime, anywhere. Furthermore, the cost-saving potential of podcast-based instruction extends beyond material expenses. The data suggests that the use of podcasts can lead to a decrease in the need for physical classroom resources, such as audio-visual equipment. This reduction in resource requirements translates into tangible financial savings for educational institutions.

Podcast-based instruction optimises resources by capitalising on digital platforms and online distribution channels. This eliminates the need for physical storage space and reduces maintenance costs. Moreover, teachers can optimise their time and effort by accessing pre-recorded podcast content, eliminating the need to create new teaching materials for each session. The efficiency gained through resource optimisation contributes to the overall financial viability of podcast-based instruction. One of the remarkable features of podcast-based instruction is its scalability. The data highlights that recorded content can be easily replicated and distributed to a large number of students, irrespective of their physical location or class size. This scalability allows educational institutions to reach a broader audience without incurring significant additional costs in terms of teaching staff or infrastructure. The ability to cater to a larger student base while maintaining cost-efficiency adds a compelling advantage to the implementation of podcast-based instruction.

The data provides valuable insights into the financial considerations associated with podcast-based instruction. Notably, the analysis suggests that podcasting as an adjunct listening comprehension aid can positively impact students' performance. The higher mean score in the post-test for the experimental group compared to the control group indicates the efficacy of podcast-based instruction in improving listening skills. This improvement in student performance reinforces the financial viability of incorporating podcasts into the curriculum. Moreover, the cost savings associated with podcast-based instruction contribute to the financial considerations. Reducing expenses related to material production, printing, publishing, and distribution, educational institutions can allocate resources more efficiently. The financial benefits extend beyond immediate cost savings, as the scalability of podcast-based instruction allows for potential long-term financial gains.

Discussion

The findings of the study indicate a substantial disparity in the effectiveness of podcast-based instruction in enhancing student listening comprehension between the experimental group and the control group. These results align with previous research conducted in the field. For instance, a study by Johnson and Smith (2017) compared the impact of podcast-based instruction on listening skills in a similar educational setting and

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found that the experimental group, which received podcast-based instruction, demonstrated significantly higher gains in listening comprehension compared to the control group. Moreover, a more recent study by Lee and Chen (2020) further supports these findings, indicating a significant improvement in listening comprehension skills among students exposed to podcast-based instruction. The experimental group, which engaged in regular podcast listening activities as part of their curriculum, exhibited a marked increase in their listening comprehension abilities compared to the control group. Equally, the data finding of the study indicates that podcast-based instruction offers economic advantages in education. By reducing reliance on physical teaching materials and leveraging digital platforms, podcasts provide a cost-effective alternative to traditional methods (Johnson &Smith, 2017). This reduces production, distribution, and resource costs while enabling easy access to educational content (Lee & Chen, 2020). Additionally, podcast-based instruction optimizes resources by eliminating the need for physical storage space and reducing maintenance costs (Wang & Sun, 2016). Teachers can also save time and effort by accessing pre-recorded podcast content (Hashemi, et al., (2021).The scalability of podcast-based instruction allows institutions to reach a broader audience without significant additional costs (Park & Yoon, 2018). These financial considerations, combined with the improved student performance associated with podcast-based instruction, make it a financially viable approach for educational institutions (Vandergrift &Goh, 2012). Hence, incorporating podcasts into teaching methodologies offers economic benefits and supports enhanced learning outcomes

Conclusion and Recommendations

In conclusion, the analysis of the data underscores the positive impact, high level of effectiveness and financial viabilityassociated with using podcasts as an instructional tool for teaching listening skills. Podcast-based instruction offers athe positive impact, high level of effectiveness and cost-effective alternative to traditional teaching methods by reducing reliance on physical materials, optimising resources, and enabling scalability. The positive impact on student performance and high level of effectiveness associated with using podcasts as an instructional tool for teaching listening skills further supports the financial viability of incorporating podcasts into educational settings. As educational institutions continue to explore innovative approaches to enhance learning outcomes, podcast-based instruction emerges as a promising avenue that combines pedagogical effectiveness with financial prudence.

Based on the positive impact, high level of effectiveness, and financial viability demonstrated by podcast-based instruction for teaching listening skills, it is recommended that educational institutions consider incorporating podcasts into their

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instructional practices. To implement this recommendation effectively, the following steps can be taken:

1. Encourage teachers to create or curate high-quality podcast content aligned with curriculum objectives and establish guidelines for content selection and quality assurance.
2. Invest in digital platforms and provide necessary recording and editing resources to facilitate easy access to podcast content and support educators in creating their own podcasts.
3. Establish a system for monitoring implementation, gathering feedback from teachers and students, and regularly evaluating the impact of podcast-based instruction on student performance.
4. Foster collaboration among educators to share best practices, successful podcast episodes, and teaching strategies, creating a supportive community of practice to enhance podcast-based instruction.

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