

Digital Waves in English for Specific Purposes: Exploring Informatics Students' Perspectives on Podcast Integration

Dwi Priyo Santoso^{*1 a}, Irfan Ramadhani^{1 b}, Intan Dwi Febriani^{1 c}

¹ Universitas Cahaya Surya, Ngronggo, Kediri, 64129, Indonesia

^a dwipriyos@ucs.ac.id^{*}; ^b iramadhani@ucs.ac.id; ^c intandwif124@gmail.com

^{*} Corresponding Author

Abstract: Indonesia ranks 18th out of 20 Asian nations in the 2024 EF English Proficiency Index with a score of 468, placing it in the 'low proficiency' category significantly behind regional peers such as the Philippines and Malaysia. Against this backdrop, the present study explores Informatics students' perspectives in their second semester regarding the implementation of podcasts within an English for Specific Purposes (ESP) context as a potential pedagogical solution. A mixed-methods design was employed, involving twenty participants selected through total sampling. Quantitative data were collected via a 4-point Likert scale questionnaire spanning seven dimensions, while qualitative data were gathered through semi-structured interviews with five respondents. Both datasets were analyzed using descriptive statistics and thematic analysis, then integrated through method triangulation. Findings indicated that all respondents had easy access to podcast content via digital platforms; 95% reported exposure to authentic English; 80% noted improvement in listening comprehension; and 75% indicated greater pronunciation confidence following regular podcast engagement. Moreover, 90% of the cohort voiced a strong preference for ESP podcast content addressing technical subjects, such as artificial intelligence, software creation, and cyber security. Therefore, the systematic incorporation of sustained, podcast-based activities into the ESP curriculum is strongly recommended.

Keywords: Podcast Integration; English for Specific Purposes (ESP); Informatics; Listening Comprehension; Speaking Fluency

INTRODUCTION

English proficiency comprises several fundamental skills that must be acquired: listening, speaking, reading, and writing. Among these four competencies, listening and speaking proficiency stand out as critical skills for undergraduate students. It empowers students to articulate ideas, opinions, and information directly and effectively within diverse academic and professional spheres. Moreover, proficiency in oral communication bolsters students' self-confidence during presentations, scholarly discussions, and interactions with the global community. As a fundamental productive skill, speaking proficiency constitutes a primary indicator of a learner's ability to employ the English language effectively for authentic communicative purposes (Anggraini, 2014). Consequently, the mastery of listening and/or speaking skills is imperative for students to remain adaptable and thrive amidst the demands of globalization.

Indonesia is identified as one of the countries with relatively low English proficiency. According to the 2024 EF English Proficiency Index (EF EPI), Indonesia ranks 18th out of 20 surveyed Asian nations with a score of 468 points, placing it in the 'low proficiency' category. This position is significantly lower than other Southeast Asian counterparts, such as the Philippines (570) and Malaysia (566), both of which are classified within the 'high proficiency' bracket. Consequently, the implementation of effective pedagogical methods is essential to enhance English language competence among undergraduate students.

Some instructional methods can be implemented in the classroom to enhance undergraduate students' English language proficiency, one of which is the integration of podcasts. According to Thorne and Payne (2005), as a multifaceted digital platform, podcasting disseminates authentic and regularly updated audio materials, which effectively affords language learners extensive exposure to target language inputs beyond conventional educational environments. In other words, podcasts serve as a versatile digital medium that educators can implement as a supplementary instructional tool to enhance learning outcomes. Beyond their pedagogical value, podcasts represent a significant global trend.

According to data from Teleprompter.com, the global podcast listenership is projected to reach approximately 584.1 million by 2025, a 6.8% increase from 2024. The continuous upward trend in podcast consumption is evidenced by a 15% increase in worldwide listeners over the last two years, with expectations to top 652 million by 2027. Consequently, podcasts serve as an ideal instrument for English language learning, particularly in developing oral communication skills.

Podcasts can be utilized as an effective pedagogical tool within the classroom to support English language instruction and improve overall language proficiency. According to Ramirez (2024), podcasts offer significant utility for undergraduate students in developing their listening comprehension, language proficiency, and conceptual understanding by exposing them to authentic language usage across diverse contexts. By providing exemplary models of spoken language alongside opportunities for active language production, this medium effectively facilitates the improvement of students' speaking skills. Furthermore, regular engagement with podcasts assists learners in expanding their vocabulary acquisition and conceptualizing new semantic meanings. Similarly, the theory proposed by Sotlikova & Haerazi (2023), students generally perceive podcasts as a flexible and practical medium that provides essential real-life English exposure, which is crucial for improving speaking skills, including vocabulary and pronunciation.

Numerous studies have demonstrated the efficacy of integrating podcasts into English language instruction. Mandasari et al. (2024) reported students' perceptions toward podcast implementation were remarkably positive across all dimensions of benefits and challenges. The integration of this medium was found to yield diverse advantages for both language skills and sub-skills, specifically enhancing speaking, listening, grammar, vocabulary, and pronunciation. Not only that, Darwis (2016) also stated that students exhibit positive attitudes regarding the implementation of podcasts within their English language instruction. Data suggest that the inherent ease of use associated with podcasts significantly contributes to a more enjoyable learning experience for the students. Parija and Padmavathi (2020) assert that podcasts are highly suitable learning tools for Generation Z due to their audio-digital consumption patterns and flexibility. In accordance with the aforementioned description, the present study aims to investigate students' perspectives regarding the integration of podcasts within the context of English for Specific Purposes (ESP).

METHODS

This study adopted a mixed-methods approach, integrating both quantitative and qualitative data within a survey research design. According to Sugiyono (2019), the mixed-methods approach integrates quantitative and qualitative methods, with questionnaires serving as structured instruments for collecting quantitative data and interviews being used to gather qualitative data through direct interactions with participants. Subsequently, direct observations were conducted during the implementation of podcast-based English for Specific Purposes (ESP) learning to provide additional empirical evidence and support data triangulation. The researchers surveyed 20 second-semester informatics students from a university in Kediri. The study primarily focuses on evaluating students' perceptions regarding the implementation of podcasts in English language learning. A total sampling technique was employed for data collection. Total sampling is a sampling technique wherein the entire population is utilized as the sample. This approach is frequently employed when the population size is relatively small, specifically fewer than 30 individuals or when the study aims to make generalizations with a minimal margin of error (Sugiyono, 2019). Arikunto (2019) also stated that if the population size is fewer than 100 individuals, the entire population should be taken as the sample.

The first research instrument administered was a questionnaire structured to investigate the perspectives of Informatics students regarding podcast implementation and practice for English language enhancement within an English for Specific Purposes (ESP) framework. To elicit quantitative data, a close-ended format incorporating a 4-point Likert scale was deployed. Those categories were strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). The questionnaire consists of twenty items categorized into seven dimensions, which were adapted from previous studies. The researchers also conducted a preliminary instrument trial to re-evaluate its empirical validity and reliability before the questionnaire was distributed widely.

Table 1. The Dimensions of the Research Questionnaire

No	Dimensions	References
1	Media Use & Access	Alarcón & Blanca (2020); Sotlikova & Haerazi (2023)
2	Podcast Design & Structure	Alarcón & Blanca (2020)
3	Listening Skill	Khoiriyah (2024); Putri et al. (2025); Indahsari (2020)
4	Speaking & Pronunciation	Yeh et al. (2021); Firdausiyah & Rohaniyah (2024); Suseno (2023)
5	Vocabulary & Grammar	Nisa et al. (2020); Ramirez (2024); Suseno (2023)
6	Motivation & Engagement	Chaves-Yuste & De-La Peña (2023); IJIET (2024)
7	ESP Integration	Suramto et al. (2021); Buwono & Surono (2024)

Table 1 outlines the seven questionnaire dimensions distributed online via Google Forms. The instrument was presented in both English and Indonesian (bilingual format) to ensure that the students could fully comprehend the items being asked. The first dimension examines the frequency, utilized devices, digital platforms, and accessibility of English podcasts for informatics students. The second dimension examines student perceptions of the structure, format, and content quality of podcasts utilized within the context of ESP. The third dimension addresses the impact of podcasts on improving listening comprehension and exposure to authentic English. The fourth dimension examines the effects of podcasts on students' speaking fluency, pronunciation, and confidence levels. The fifth dimension addresses the role of podcasts in enriching technical ESP vocabulary and grammatical awareness among informatics students. The sixth dimension examines students' motivation levels, interest, and academic engagement when utilizing podcasts. The last dimension focuses on the relevance and suitability of podcasts in the Informatics ESP context and their expected integration into the course.

The second instrument employed in this study was a semi-structured interview, designed to support and clarify the quantitative data obtained from the questionnaire. This interview aimed to explore, in depth, the perspectives of informatics students regarding the use of podcasts to enhance their English for Specific Purposes (ESP) proficiency. The interview protocol consisted of six items developed based on the established research dimensions and reinforced by relevant literature. The researchers selected five respondents for the interviews, which were digitally recorded using a smartphone. During the interview data collection, the researcher utilized initials for the respondents (R1, R2, R3, R4, R5) to ensure data confidentiality. In this research, quantitative data were analyzed using descriptive statistics, while qualitative data were analyzed through thematic analysis.

To triangulate the data and strengthen the quantitative findings from the questionnaire and the qualitative findings from the interviews, the researchers conducted direct observations of 20 Informatics students during the implementation of podcast-based English for Specific Purposes (ESP) learning. The empirical observations aimed to corroborate students' reported learning behaviors, levels of engagement, and practical strategies as they interacted with the digital medium.

The Results and Discussion section focuses on presenting objective findings based on data and hypothesis testing. These findings should be analyzed in depth through comparison with theory and relevant prior research. To improve readability, authors are advised to organize the discussion into subsections based on the research questions.

Regarding visual elements, all tables and images must be centered (at the top or bottom of the page) and must be referenced in the text. Technical requirements include using single spacing for tables and using high-resolution color images. Finally, ensure that tables and images are numbered sequentially according to their order of appearance.

RESULTS AND DISCUSSION

Results

This section delineates the findings concerning student perceptions of integrating podcasts into the Informatics ESP framework. The presentation of data was structured into two parts, comprising the quantitative results derived from the questionnaire and the qualitative findings extracted from the interviews.

Questionnaire Results

Table 2. Respondents' Questionnaire Response Data

No	Item	SA	A	D	SD	SA %	A %	D %	SD %
1	Listening to English podcasts independently	3	8	9	0	15.0%	40.0%	45.0%	0.0%
2	Having easy access via smartphones/laptops	14	6	0	0	70.0%	30.0%	0.0%	0.0%
3	Using Spotify/YouTube for accessing podcasts	5	11	4	0	25.0%	55.0%	20.0%	0.0%
4	Preferring podcasts over textbooks	6	9	5	0	30.0%	45.0%	25.0%	0.0%
5	The language in podcasts is clear and structured	1	13	6	0	5.0%	65.0%	30.0%	0.0%
6	Podcasts are relevant to Informatics	6	6	7	1	30.0%	30.0%	35.0%	5.0%
7	Improving listening comprehension	6	10	4	0	30.0%	50.0%	20.0%	0.0%
8	Exposure to authentic English	5	14	1	0	25.0%	70.0%	5.0%	0.0%
9	Podcasts are more engaging than classroom audio	5	11	4	0	25.0%	55.0%	20.0%	0.0%
10	Improving English pronunciation	3	12	5	0	15.0%	60.0%	25.0%	0.0%
11	Feeling more confident when speaking English	2	9	8	1	10.0%	45.0%	40.0%	5.0%
12	Podcast practice improves speaking	4	12	4	0	20.0%	60.0%	20.0%	0.0%
13	Enriched vocabulary (technical terms)	3	13	4	0	15.0%	65.0%	20.0%	0.0%
14	Better understanding of grammar	2	17	1	0	10.0%	85.0%	5.0%	0.0%
15	Learning more enjoyable	7	7	6	0	35.0%	35.0%	30.0%	0.0%
16	More motivated to learn independently	2	12	5	1	10.0%	60.0%	25.0%	5.0%
17	Podcast integration is more effective	5	10	5	0	25.0%	50.0%	25.0%	0.0%
18	Informatics podcast topics support ESP	4	14	2	0	20.0%	70.0%	10.0%	0.0%
19	Creating podcast improves proficiency	6	9	5	0	30.0%	45.0%	25.0%	0.0%
20	Recommending the inclusion of podcasts in the ESP curriculum	4	9	7	0	20.0%	45.0%	35.0%	0.0%

The data gathered from the 20 respondents who completed the questionnaire were further analyzed quantitatively, as presented in Table 2. This instrument examined seven dimensions of Informatics students' perspectives regarding the implementation of podcasts to enhance English proficiency within an English for Specific Purposes (ESP) context. The first dimension addresses the usage and accessibility of podcasts. Regarding independent learning, 55% of the respondents stated that they regularly listened to English podcasts, whereas 45% reported otherwise. In terms of media accessibility, 100% of the participants unanimously agreed that podcast content was easily accessible via smartphones and laptops. Furthermore, 80% of the respondents utilized digital platforms such as Spotify or YouTube to watch English podcasts and 20% did not agree about digital platforms such as Spotify or YouTube to watch English podcasts. Lastly, 75% of the respondents preferred listening to podcasts over textbooks when learning English, while 25% still favored textbook methods.

In the second dimension regarding podcast content design and structure, 70% of the respondents agreed that the podcasts they frequently listened to possess a clear and well-structured language framework, while the remaining 30% disagreed. Regarding the relevance of English podcasts to informatics, 60% of the participants expressed agreement, whereas 40% disagreed. Regarding the results of the third dimension on listening skills, 80% of the respondents agreed that English podcasts enhanced their listening comprehension abilities, while 20% disagreed. Furthermore, 95% of the participants agreed that English podcasts exposed students to authentic English used in real communication contexts, whereas only 5% expressed disagreement. Regarding engagement, 80% of the students agreed that podcasts provided more interesting listening materials than traditional classroom audio, while the remaining 20% disagreed.

Regarding the results of the fourth dimension on speaking and pronunciation, 75% of the respondents agreed that listening to native speakers through podcasts helped improve students' English pronunciation, while 25% expressed disagreement. Furthermore, 55% of the respondents felt more confident speaking English after regularly listening to podcasts, whereas the remaining 45% disagreed. Additionally, 80% of the respondents agreed that podcast practice activities trained students to speak

English, while 20% disagreed. Regarding the results of the fifth dimension on vocabulary and grammar, 80% of the respondents agreed that listening to English podcasts enriched students' vocabulary, particularly technical terms related to informatics, while 20% disagreed. Concerning whether exposure through podcasts helped students understand how English grammar was used naturally in real communication, 95% of the participants agreed, and only 5% expressed disagreement.

Based on the results of the sixth dimension, 70% of the respondents agreed that utilizing podcasts made their English learning experience more enjoyable and engaging, while 30% disagreed. Furthermore, 70% of the respondents felt more motivated to learn English independently after being introduced to podcast-based learning, whereas the remaining 30% expressed disagreement. Based on the results of the seventh dimension, 75% of the respondents believed that integrating podcasts into ESP courses would be more effective than relying solely on conventional instructional materials, while 25% disagreed. Furthermore, 90% agreed that podcasts related to informatics topics such as AI, software development, and cyber security would highly support students' ESP learning, whereas 10% of the respondents expressed disagreement. Additionally, 75% of the respondents agreed that creating their own English podcasts as a project-based assignment would enhance their English proficiency, while 25% disagreed. Finally, 65% of the respondents agreed that the formal integration of podcasts should be incorporated into the informatics ESP curriculum, whereas the remaining 35% disagreed.

Interview Results

The first question concerned the ease of obtaining English podcast content relevant to the field of informatics. All respondents stated that accessing English podcast content via YouTube and Spotify was straightforward. In relation to this, R1 stated:

"...it is quite easy because now there are many English podcasts about informatics and IT. As for the platforms, the ones that I have known so far are YouTube and Spotify."

A similar perspective was shared by R2, R3, R4 and R5, who also emphasized the availability of IT content on mainstream networks.

The second question investigated whether listening to podcasts helped students understand English better, particularly in terms of listening comprehension, and requested specific examples. The respondents provided varied insights, indicating that students' listening comprehension was significantly enhanced by the utilization of podcasts. For instance, R2 remarked:

"...I listen to content on YouTube, such as 'Speak English With Class,' that podcast or video helps me become more accustomed to hearing English pronunciation directly, especially word pronunciation... it also makes it easier for me to understand the conversation content and improves my listening skills."

The third question examined whether listening to English podcasts influenced the way students spoke English, particularly regarding pronunciation and fluency. Broadly speaking, the respondents agreed with this notion, as evidenced by R4, who remarked:

"Yes, especially in terms of pronunciation and speaking fluency. I have become more confident in correctly pronouncing technical English terms."

The fourth question addressed how technical English vocabulary in informatics or IT podcasts differed from general vocabulary and how students managed it. The respondents' answers varied, as exemplified by R2, who shared their strategy:

"...vocabulary in the IT field is more technical, whereas general vocabulary is easier to understand in daily life. ... if there is a term I do not understand, I usually use subtitles or jot down new vocabulary in a small notebook to make it easier to relearn."

The fifth question addressed how the use of podcasts influenced students' motivation to learn English compared to conventional learning methods. The majority of the respondents' answers were positive, as exemplified by R4, who stated:

“Podcasts make learning more interesting and flexible compared to just reading books. Because the topics match my interests, I become more motivated to learn English.”

The final question addressed the integration of podcast methods into the ESP curriculum of the informatics department. The respondents' answers varied, but they broadly agreed that podcasts could be applied as a supporting learning method for ESP instruction in informatics, as exemplified by R3, who stated:

“In my opinion, podcasts can be used as a supporting learning method in the ESP curriculum for informatics students, especially to help train listening skills and understand technical vocabulary in English.”

Observation Results

To triangulate the data and reinforce both the quantitative findings from the questionnaires and the qualitative insights from the interviews, direct field observations were conducted with 20 Informatics students. This observation phase was carried out across two sessions within a one-week period, immediately after all questionnaire and interview data were collected. This follow-up empirical observation aimed to factually validate students' learning behaviors, engagement levels, and practical strategies implemented while interacting with podcast digital media. To maintain participant confidentiality in accordance with ethical research guidelines, behavioral field notes were anonymized using a dedicated coding scheme (R1 to R20). The raw observational data were subsequently reduced and systematically categorized into major learning themes based on their frequency of occurrence. The detailed raw observational records and their corresponding systematic categorizations were presented in the tables below.

Table 3. Observation Result

No	Observation Category	Observed Behavior	Frequency
1	Media Accessibility	Students were able to access the podcasts easily using smartphones or laptops.	20/20
2	Listening Comprehension	Students demonstrated improved listening comprehension after listening to the audio materials.	16/20
3	Vocabulary Learning	Students expanded and recorded their knowledge of technical (IT-related) vocabulary from the podcasts.	16/20
4	Speaking Practice	Students utilized podcast-based listening activities to practice their speaking skills.	15/20
5	Pronunciation and Confidence	Students improved their English pronunciation and demonstrated greater confidence in using English.	14/20

Discussion

Digital Accessibility and the Transformation of Independent Learning Behavior

Based on the researchers' findings, the survey data indicated that 100% of the respondents agreed that podcast content was easily accessible via smartphones or laptops. Furthermore, over 75% of the participants preferred podcasts as a learning medium compared to textbooks. These self-reported survey results were strongly corroborated by direct field observations under the Media Accessibility category, where all observed students (20 out of 20, or 100%) were able to access the podcasts easily using smartphones or laptops without technical difficulties. This preference implies that informatics students are digital natives who are highly familiar with platforms such as Spotify and YouTube. Podcasts offer the concept of ubiquitous learning allowing education to occur anytime and anywhere which shifts the reliance away from conventional, textbook-based methods that are often perceived as overly traditional. This aligns with Indahsari (2020), who asserted that podcasts benefit EFL learners by facilitating the development of listening skills within an authentic, flexible, and accessible environment, thereby fostering a transition from conventional learning toward independent, digitally-driven learning.

Podcast Effectiveness in Enhancing Listening Skills and Authentic Language Exposure

The majority of the respondents agreed that digital media, such as podcasts, differed significantly from traditional classroom audio recordings, which were often perceived as rigid, artificial, or unnatural. In contrast, the podcasts they regularly consumed presented authentic conversations, natural intonations, and native accents, thereby helping students bridge the gap between 'theoretical English' and 'real-world English.' This was evidenced by the survey data, which showed that 80% of the respondents agreed that podcasts enhanced their listening comprehension, 95% reported exposure to authentic English, and R2 specifically noted that they became more accustomed to direct pronunciation. Crucially, these self-reported findings were directly corroborated by field observations under the Listening Comprehension category, where 16 out of 20 students demonstrated improved listening comprehension after listening to the audio materials. This finding is consistent with Suseno (2023), who asserted that podcasting utilizes authentic materials that facilitate the development of both receptive and productive language skills, ultimately helping students develop a deeper understanding of pronunciation, intonation, and contextual meaning.

Enhancing Speaking Skills and Confidence Through Audio Input

Beyond merely improving listening comprehension, the utilization of audio input media also enhanced students' speaking skills and self-confidence. Regular exposure to native speakers via podcasts significantly boosted students' confidence when pronouncing technical terms. This was substantiated by the empirical survey data, which revealed that 75% of the respondents felt assisted in their pronunciation, while participant R4 explicitly stated that they became more confident in speaking IT terms after listening to podcasts. Furthermore, these findings were strongly supported by direct field observations; under the Speaking Practice category, 15 out of 20 students actively utilized podcast-based listening activities to practice their speaking skills, while under the Pronunciation and Confidence category, 14 out of 20 students improved their English pronunciation and demonstrated greater confidence in using English. This finding aligns with Firdausiyah and Rohaniyah (2024), who asserted that dialogic podcasts significantly enhance students' speaking fluency by increasing speech rate, reducing hesitation, and enriching lexical variation, all of which serve as critical components of natural pronunciation and speaking confidence.

Cognitive Strategies for Understanding Technical Vocabulary in ESP for IT

In enriching English technical vocabulary for Informatics (ESP), students employed distinct learning strategies. One such strategy involved leveraging technology, such as accessing podcast content, which effectively facilitated vocabulary acquisition. This was evidenced by the survey data, which indicated that 80% of the respondents experienced an expansion in their IT vocabulary after watching or listening to podcasts. However, challenges persisted, as participants perceived IT terminology to be more complex than general English vocabulary. To mitigate this, participant R2 shared a specific strategy involving the use of subtitles and jotting down new words in a notebook to review their contextual meanings. Crucially, these self-reported strategies were strongly corroborated by direct field observations under the Vocabulary Learning category, in which 16 out of 20 students actively expanded and recorded their knowledge of technical (IT-related) vocabulary from the podcasts.. This practice aligns with Tran and Do (2023), who asserted that vocabulary notebooks serve as a valuable tool for ESP students, particularly in the acquisition of specialized or technical vocabulary.

Curriculum Implications of Podcast and Project-Based Learning (PBL) Integration in ESP

The study's outcomes indicate that students' willingness to create their own podcast projects demonstrates their readiness for Project-Based Learning (PBL), which cultivates teamwork, technical material research, and oral speaking practice. This readiness is supported by the data, which showed that 75% of the respondents agreed that podcasting should serve as a supplementary learning method within the informatics ESP curriculum. Furthermore, 90% of the participants requested highly specific topics such as AI, cybersecurity, and software development to be integrated into podcast-based ESP learning. This finding is consistent with Buwono and Surono (2024), who asserted that podcast creation within a PBL framework fosters active student engagement and enhances EFL learners' speaking

confidence, as the content-creation process necessitates rigorous research, team collaboration, and planned speech production.

CONCLUSION

In conclusion, this study investigated the perspectives, learning strategies, and behavioral engagement of second-semester Informatics students regarding the integration of podcasts within the English for Specific Purposes (ESP) framework. Utilizing a mixed-methods approach, the study synthesized quantitative questionnaire data, qualitative interview findings, and direct field observations from twenty respondents to achieve a thorough triangulation of the results. This research has provided a comprehensive understanding of students' attitudes, experiences, and expectations toward podcast-based English learning. The gathered empirical evidence demonstrates that podcast integration serves as a viable, engaging, and effective pedagogical strategy to enhance English proficiency among Informatics students within the ESP context. The convergence of quantitative and qualitative data consistently underscores the value of podcasts in improving listening comprehension, speaking fluency, vocabulary acquisition, and learner motivation. Consequently, systematic consideration should be given to incorporating sustained, podcast-based activities - including receptive listening tasks and productive podcast creation projects - into the English language curriculum, particularly within the informatics department.

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