Research Article

Examining the efficacy of podcast creation and dissemination in fostering student communication skill

Shamim Akhter[1,*], Tribhuwan Kumar[2], Anne Thingnam[1], Chaohai Lin[3]

[1] Faculty of Education and Liberal Arts, INTI, International University, Putra Nilai, 71800 Nilai, Malaysia

[2] Department of Education, College of Science and Humanities at Sulail, Prince Sattam Bin Abdulaziz University, Al Kharj – 11942, Saudi Arabia

[3] Department of Education, Guangdong University of Petrochemical Technology, Guangdong, 518000, China

* Corresponding author: Shamim Akhter, shamim.akhter@newinti.edu.my

ABSTRACT

The integration of podcasting into educational settings has gained significant attention as an innovative approach to enhance student communication skills. This article investigates how creating and sharing podcasts contributes to the development of oral proficiency, listening comprehension, self-confidence, and learner autonomy. Drawing on a comprehensive review of empirical studies and theoretical frameworks, the analysis reveals that student-generated podcasts provide authentic, flexible, and collaborative opportunities for language practice. By actively engaging in scripting, recording, editing, and publishing audio content, learners improve fluency, pronunciation, grammatical accuracy, and vocabulary usage. Furthermore, the awareness of a real or virtual audience motivates students to communicate more clearly and effectively, fostering greater confidence and reducing speaking anxiety. The podcasting process also promotes metacognitive skills by encouraging self-assessment and reflection on performance, which enhances learner self-awareness and facilitates targeted improvement. Collaborative podcast projects stimulate interpersonal communication and negotiation of meaning, further enriching communication competencies. The study demonstrates that podcasting activities enhance students' ability to organize and articulate ideas coherently while developing critical thinking and creative expression capabilities. Results indicate that regular podcast production leads to measurable improvements in verbal communication fluency and increases student engagement with course content. Despite challenges such as technical barriers and initial learner apprehension, pedagogical strategies including scaffolding, peer feedback, and accessible technology can optimize outcomes. Beyond language learning, podcasting supports digital literacy and interdisciplinary communication skills, making it a versatile tool in modern education. This research underscores the value of integrating podcasting to prepare students for effective communication in digital professional environments.

Keywords: podcasting; student communication skills; learning opportunities; learner autonomy; digital literacy; speaking confidence

1. Introduction

Communication skills, especially oral communication, are critical competencies in education and professional contexts. Traditional classroom methods, characterized by teacher-centered instruction and limited individualized feedback, often constrain opportunities for authentic speaking practice and meaningful interaction[1]. The advent of digital technologies, particularly podcasting, offers innovative pathways to engage students in meaningful communication activities that transcend traditional classroom limitations. Podcasts, as digital audio recordings accessible on-demand, provide a flexible, student-centered platform for learners to create, share, and reflect on spoken content[2]. Research demonstrates that podcasts enhance linguistic aspects such as pronunciation, fluency, and vocabulary while increasing learner motivation and engagement. Moreover, podcasts allow learners to access authentic language input from native speakers, fostering better understanding of everyday expressions and improving communication skills in real contexts[3].

Despite growing interest in podcasting as an educational tool, significant gaps remain in the literature. While several studies have examined podcasting's impact on individual skill components such as listening comprehension or speaking fluency, a comprehensive synthesis examining how podcasting simultaneously develops multiple dimensions of communication competence—including oral proficiency, confidence, autonomy, and metacognitive awareness—remains limited[4,5]. Furthermore, most existing studies focus on isolated implementations without systematically examining the pedagogical mechanisms and theoretical foundations that explain podcasting's effectiveness across diverse educational contexts[6]. This literature review addresses these gaps by synthesizing empirical evidence and theoretical frameworks to provide a holistic understanding of how creating and sharing podcasts enhances student communication skills. Specifically, this review examines the cognitive, affective, and social mechanisms underlying podcast's effectiveness and identifies practical pedagogical strategies for optimizing learning outcomes.

RQ1: How does creating and sharing podcasts enhance different dimensions of student communication skills, including speaking fluency, pronunciation, listening comprehension, and vocabulary development?

RQ2: What are the cognitive, affective, and social mechanisms through which podcasting facilitates communication competence development?

RQ3: How does podcasting influence affective factors such as learner confidence, motivation, anxiety reduction, and autonomy in communication tasks?

RQ4: What pedagogical strategies, design principles, and implementation practices optimize the effectiveness of podcast-based communication skills instruction?

RQ5: What challenges and barriers do educators and learners encounter when implementing podcast activities, and how can these be effectively addressed?

To systematically examine the role of podcasting in communication skills development, this literature review addresses the following research questions:

2. Understanding podcasting in education

Podcasts are audio programs distributed digitally, often episodic, covering a wide range of topics. In education, podcasts can be teacher-created or student-generated. Student-created podcasts involve learners scripting, recording, editing, and publishing audio content, often collaboratively. This process demands active use of language and communication strategies, making podcasts a rich medium for skill development.

Recent studies highlight that student-generated podcasts foster deeper engagement and improve both linguistic and digital literacy skills by encouraging creativity and collaboration[6,7].

2.1. Why podcasts for communication skills?

Podcasts have become increasingly recognized as an effective tool for developing communication skills, particularly oral communication, which is essential in education and professional life. Unlike traditional classroom methods, which often provide limited opportunities for authentic speaking practice and immediate feedback, podcasts offer a dynamic and flexible platform that actively engages learners in meaningful communication activities. By creating and sharing podcasts, students are encouraged to script, rehearse, and deliver spoken content to real or virtual audiences, fostering not only fluency and pronunciation but also critical thinking and creativity. The increasing integration of technology in education necessitates an understanding of how teachers' digital capabilities influence their professional lives[8].

One key advantage of podcasts is their accessibility and convenience; learners can produce and listen to content anytime and anywhere, allowing for repeated practice and reflection that traditional classroom settings may not easily accommodate[9]. This flexibility supports diverse learning styles and paces, making podcasting an inclusive educational tool. Additionally, the collaborative nature of many podcast projects promotes teamwork and interpersonal communication skills, as students negotiate meaning, share ideas, and provide peer feedback during the production process.

Moreover, podcasts bring a human element to digital learning by incorporating voice, tone, and emotion, which helps learners connect more deeply with the material and develop empathy and listening skills that are important facets of effective communication[10]. The awareness that their work will be heard by others motivates students to communicate clearly and confidently, reducing speaking anxiety and building self-esteem. Podcasts combine authenticity, flexibility, collaboration, and engagement, making them a powerful medium for enhancing communication skills in educational contexts.

2.2. Authentic communication

Authentic communication refers to interacting in a way that is honest, sincere, and true to oneself. It involves expressing genuine thoughts, feelings, and needs without putting on a facade or mask. This style of communication encourages openness and vulnerability, allowing people to connect on a deeper level and build trust[11]. In educational contexts, fostering authentic communication helps learners engage more meaningfully, as they are encouraged to speak from their own perspectives and experiences rather than merely repeating rehearsed or artificial language. Authentic communication is characterized by active listening, empathy, and self-awareness. It creates a safe environment where individuals feel respected and valued, which is essential for effective learning and collaboration. When students communicate authentically, they develop not only language skills but also interpersonal skills such as empathy and emotional intelligence, which are critical for real-world interactions.

In classrooms, promoting authentic communication means shifting from scripted or formulaic language practice toward encouraging spontaneous, meaningful exchanges that reflect real-life situations. This approach helps learners focus on conveying meaning rather than just accuracy, leading to more natural and confident communication[12]. Moreover, authentic communication supports cultural competence by requiring learners to consider context, audience, and intention, which enriches their overall communicative competence. Authentic communication is vital because it builds trust, enhances engagement, and fosters deeper connections skills that are fundamental for both academic success and personal growth.

2.3. Repeated practice

Repeated practice refers to the continual and systematic engagement in communication activities to reinforce and improve skills over time. It is widely recognized as a critical factor in acquiring and sustaining effective communication abilities. Research indicates that a single exposure or practice session is often insufficient to produce lasting improvements; instead, repeated and spaced practice sessions lead to more durable skill development[13]. For example, in clinical education, deliberate and repeated practice of communication skills in real-world settings has been shown to enhance proficiency and confidence, with learners reporting positive evolution in their communication abilities after sustained engagement.

Moreover, repeated practice allows learners to internalize communication strategies, reduce errors, and build automaticity, which is essential for fluent and spontaneous interaction[14]. Studies in simulation-based education emphasize the necessity of multiple shorter practice sessions spaced over time rather than a single, prolonged session to maintain and deepen communication competencies. This approach helps prevent skill decay and promotes long-term retention, making repeated practice a cornerstone of effective communication training.

2.4. Audience awareness

Audience awareness is the ability to understand the characteristics, preferences, and needs of the audience to tailor messages effectively for better engagement and communication success. This skill is fundamental because it ensures that the content resonates with the audience's values, beliefs, and expectations, thereby enhancing clarity and persuasive impact. For example, when communicators consider their audience's background and interests, they can adjust tone, vocabulary, and complexity to make their message more accessible and compelling.

Audience awareness also plays a critical role in digital communication, where the diversity and anonymity of audiences require communicators to be especially mindful of how messages might be interpreted across different cultural and social contexts. Another study emphasizes that developing audience awareness enhances students' metacognitive skills, enabling them to anticipate audience reactions and adapt their communication strategies accordingly, which leads to more effective and confident interactions[15]. Audience awareness is a vital communication competency that involves understanding and adapting to the audience's needs, ultimately making communication clearer, more engaging, and more impactful.

2.5. Multimodal learning

Multimodal learning is an educational approach that engages learners through multiple modes or channels of communication, such as visual, auditory, kinaesthetic, and textual inputs. Rather than relying solely on traditional methods like reading or listening, multimodal learning integrates various formats including videos, images, audio recordings, hands-on activities, and written materials to enhance understanding and retention of information. This approach recognizes that learners have diverse preferences and strengths, and by presenting content through multiple sensory pathways, it supports more effective and inclusive learning experiences[16].

One of the core benefits of multimodal learning is that it mirrors how people naturally process information in real-world contexts, where communication rarely occurs through a single mode. For example, combining spoken explanations with visual aids and interactive tasks helps learners build connections between concepts and apply knowledge more flexibly[17]. This fusion of modalities not only improves engagement but also supports deeper cognitive processing, leading to better long-term retention and transfer

of skills. Moreover, multimodal learning fosters learner autonomy by allowing individuals to interact with content in ways that best suit their learning styles and needs.

It encourages creativity and critical thinking as learners synthesize information from different sources and express their understanding through varied media. In digital education environments, multimodal strategies are particularly valuable because they accommodate diverse learner profiles and help overcome barriers related to language, culture, or accessibility. Multimodal learning is a powerful instructional design approach that enhances communication and comprehension by leveraging multiple sensory and cognitive channels, making education more engaging, effective, and equitable.

2.6. Flexibility

One of the most significant advantages of podcasts in education is their inherent flexibility. Podcasts are asynchronous learning tools, meaning learners can access audio content anytime and anywhere, according to their individual schedules and learning preferences. This flexibility allows students to learn at their own pace, replaying difficult sections or skipping content they already understand, which supports personalized learning and better knowledge retention. For example, students can listen to podcasts during commutes, exercise, or other spare moments, making learning seamlessly integrate into daily routines without the constraints of fixed class times.

Moreover, this self-paced access empowers learners to take control of their learning process, fostering autonomy and motivation. Recent research highlights that flexibility in podcast learning significantly enhances student engagement and satisfaction, especially among technologically savvy learners who appreciate the ability to manage their study time independently[18]. The ability to pause, rewind, and revisit podcast episodes also enables learners to deepen their understanding and improve communication skills through repeated exposure and practice.

Additionally, podcasts cater to diverse learning styles and paces, accommodating students who may require more time to process information or prefer auditory learning. This adaptability makes podcasts an inclusive educational medium that can bridge gaps caused by varying learner needs and external time constraints[19]. By providing anytime-anywhere access, podcasts help democratize education, allowing learners from different backgrounds and schedules to benefit equally.

3. Empirical evidence on podcasting and communication skills

3.1. Improvement in speaking skills

Multiple studies demonstrate that student-created podcasts significantly improve speaking skills, including fluency, pronunciation, vocabulary, and grammar accuracy. It was found that Iranian EFL learners who produced podcasts of pair and group discussions showed greater improvement in speaking skills than those who only listened to podcasts or received traditional instruction[20]. It was reported significant gains in speaking performance among Indonesian students after podcast-based instruction, highlighting enhanced pronunciation, fluency, and confidence[21]. ESL learners who created podcasts improved their grammatical accuracy (notably the use of 3rd person singular), produced more comprehensible speech, and became more self-aware of their oral performance[22].

3.2. Enhancement of listening and comprehension

Podcasting also supports listening skills, which are closely linked to oral communication. Studies at Xaverius Maria and other institutions showed that students exposed to podcasts improved their listening comprehension and speaking achievement, with statistically significant gains compared to control groups.

Podcasts provide varied and authentic listening contexts, making comprehension easier and more enjoyable, which indirectly supports speaking development[23].

Podcasts serve as an effective medium for enhancing listening skills because they provide authentic, contextualized auditory input that mirrors real-life communication. Listening comprehension is fundamental to oral communication, as it enables learners to understand spoken language, respond appropriately, and engage in meaningful dialogue. Research shows that integrating podcasts into language learning significantly improves students' listening abilities by exposing them to varied accents, speech rates, and conversational styles, thereby preparing them for authentic communication scenarios[24].

Moreover, podcasts encourage active listening, a process that involves not just hearing but also interpreting and critically analyzing spoken content. This active engagement supports the development of higher order listening skills such as inference and prediction, which are essential for effective communication[25]. The flexibility of podcasts allowing learners to pause, rewind, and replay enables repeated exposure to challenging language features, facilitating better comprehension and retention.

Empirical studies confirm that students who use podcasts as part of their learning routine demonstrate significant improvements in listening test scores compared to those who rely solely on traditional classroom instruction[26]. Additionally, podcasts foster learner motivation and autonomy, as students can choose topics of interest and control their pace, which further enhances listening engagement and oral communication skills[23]. Podcasts provide rich, authentic listening experiences that develop critical auditory skills closely tied to oral communication, making them a valuable tool in language education[27].

3.3. Boosting confidence and motivation

The podcasting process encourages students to rehearse and self-correct, reducing anxiety about speaking in front of others. Podcasting provides a unique, low-pressure environment where students can repeatedly practice their speaking skills without the immediate presence of an audience. This opportunity to rehearse allows learners to refine their pronunciation, intonation, and content before finalizing their recordings, which significantly reduces the fear and anxiety often associated with public speaking[28]. Unlike live oral presentations, podcasts give students control over the pace and timing of their speech, enabling them to pause, re-record, and self-correct as needed, fostering a more confident and polished delivery. Research indicates that this iterative process of rehearsal and self-assessment helps learners become more aware of their speaking errors and areas for improvement, promoting autonomous learning and greater self-efficacy[29].

By engaging in multiple recording attempts, students develop a more positive attitude toward speaking tasks and experience decreased communication apprehension. This reduction in anxiety translates into improved performance not only in podcast projects but also in face-to-face speaking situations[6]. Furthermore, podcasting supports reflective learning practices. Students can listen back to their recordings to evaluate their progress and identify specific linguistic or delivery issues, which encourages deliberate practice and continuous improvement[30]. This reflective cycle is essential for building long-term communication competence and overcoming the psychological barriers that hinder oral participation in traditional classroom settings. Thus, the podcasting process's allowance for rehearsal and self-correction creates a supportive learning environment that alleviates speaking anxiety and empowers students to develop stronger, more confident oral communication skills.

It was found that repeated podcast practice helped students overcome nervousness and perform better in oral tests. This finding aligns with recent research emphasizing that repeated engagement with speaking tasks in a low-pressure environment allows learners to build familiarity and confidence, which are critical for

reducing public speaking anxiety[31]. By practicing multiple times through podcast creation, students can rehearse their speech, self-correct errors, and gradually become more comfortable with their oral delivery without the immediate stress of a live audience.

Psychological interventions integrated with repeated speaking practice have been shown to significantly improve confidence and reduce anxiety during presentations. For example, cognitive-behavioural therapy (CBT) and mindfulness-based techniques, when combined with repeated speaking exercises such as podcasting, lead to measurable improvements in speaking skills and anxiety management[31]. These interventions help learners reframe negative beliefs about public speaking and develop coping strategies that complement the experiential learning gained through podcast rehearsals.

Moreover, meta-analytical studies on foreign language speaking anxiety interventions suggest that repeated practice whether through podcasts or other speaking activities is moderately effective in alleviating anxiety and improving performance[32]. The ability to record and listen to oneself repeatedly fosters self-awareness and allows learners to identify and work on specific areas of difficulty, thus enhancing oral proficiency over time. Recent reviews also highlight that repeated podcast practice encourages learner autonomy and motivation, as students can control the pacing and timing of their practice sessions. This autonomy reduces performance pressure and promotes a positive learning experience, which is essential for sustained improvement in speaking skills[33]. Repeated podcast practice serves as a powerful tool to reduce speaking anxiety by providing a safe, flexible, and reflective environment for rehearsal. When combined with psychological strategies, it significantly enhances students' confidence and oral communication performance.

It was also emphasized that podcast materials boost motivation and foster learner independence and responsibility. This foundational insight has been supported and expanded by recent research, which shows that podcasts create engaging, learner-centered environments where students take active control of their learning process. Podcasts offer flexibility and autonomy, allowing learners to choose when, where, and how to engage with content, which cultivates self-regulated learning behaviors essential for lifelong learning[34].

Recent studies highlight that podcasting encourages motivation by providing authentic, relevant, and personalized content that resonates with learners' interests and academic goals. For example, structured podcast-based speaking instruction has been shown to increase students' informal digital learning engagement, which correlates with higher motivation and improved academic outcomes[18]. This engagement is driven by the interactive and creative nature of podcast creation, which empowers students to express themselves and explore topics meaningful to them, thereby fostering intrinsic motivation.

Moreover, podcasts support learner independence by enabling asynchronous learning, where students can manage their study time and pace according to individual needs. This flexibility enhances responsibility as learners become accountable for their progress and outcomes without constant teacher supervision. The ability to revisit and reflect on podcast recordings also encourages metacognitive awareness, helping learners identify strengths and areas for improvement, which further strengthens autonomous learning habits.

Additionally, podcasting integrates digital literacy skills with language learning, equipping students with competencies that are increasingly vital in the digital age. This integration fosters a sense of ownership and confidence, as learners navigate both content creation and technological tools independently[34]. Podcast materials serve as powerful motivators and catalysts for learner independence and responsibility by combining flexibility, personalization, and opportunities for creative expression within a technology-enhanced learning environment.

3.4. Development of self-awareness

Creating podcasts increases learners' awareness of their speaking strengths and weaknesses. Creating podcasts increases learners' awareness of their speaking strengths and weaknesses by providing opportunities for reflection and self-evaluation. When students record their own speech, they can listen critically to their pronunciation, grammar, fluency, and overall delivery, which promotes metacognitive engagement and helps identify areas needing improvement[35]. This reflective process encourages learners to become more conscious of their language use, fostering a deeper understanding of their communicative competence.

Research shows that podcasting combined with self-awareness strategies significantly improves pronunciation accuracy, especially in challenging areas such as tense-lax vowel sounds among beginner EFL learners[36]. The ability to repeatedly listen to and analyze their recordings enables learners to notice subtle errors that might be overlooked in live speaking situations, thus supporting targeted practice and gradual improvement.

Moreover, student-created podcasts have been found to enhance not only linguistic accuracy but also self-perception of oral performance. Learners who produced podcasts showed increased self-awareness and tended to produce more comprehensible speech, while also reducing inaccurate self-assessments of their abilities[37]. This heightened self-awareness is crucial for developing realistic self-evaluation skills and fostering learner autonomy.

Podcasting also encourages critical thinking and the use of metacognitive strategies, as learners plan, monitor, and evaluate their language production throughout the podcast creation process[38]. Such metacognitive engagement strengthens learners' ability to regulate their own learning and communication skills effectively. Podcasting acts as a powerful tool to develop self-awareness by enabling learners to reflect on their oral skills, recognize strengths and weaknesses, and take responsibility for their language improvement in an interactive and technology-supported environment.

3.5. Mechanisms by which podcasting enhances communication skills

The effectiveness of podcasting in developing communication skills can be understood through multiple established learning theories that provide a robust theoretical foundation for the mechanisms described below. Constructivist theory[39,40] posits that learners actively construct knowledge through engagement with authentic tasks and social interaction, which aligns directly with student-created podcasts as authentic communication activities. Cognitive Load Theory[41] explains how multimodal presentation and iterative production processes optimize working memory resources and facilitate schema acquisition. Multimedia Learning Theory[42] demonstrates that combining verbal and auditory modalities enhances learning when designed according to cognitive principles. Social Constructivism[1] emphasizes collaborative knowledge construction through dialogue and negotiation, which podcast group projects operationalize effectively. Finally, Self-Determination Theory[43] explains how podcasting supports intrinsic motivation by satisfying needs for autonomy, competence, and relatedness. These theoretical frameworks provide complementary lenses through which to understand how podcasting mechanisms translate into communication skills development.

3.6. Active production and rehearsal

Theoretical Framework: This mechanism is grounded in Constructivist Learning Theory[12], which emphasizes active engagement in knowledge construction rather than passive reception. Podcasting operationalizes constructivist principles by requiring learners to actively produce language rather than merely consuming it. Additionally, Deliberate Practice Theory[44] explains how repeated, focused rehearsal

with immediate feedback leads to skill acquisition. The iterative nature of podcast creation—scripting, recording, reviewing, and revising embodies deliberate practice principles that facilitate automaticity in oral production. Output Hypothesis[45] further supports this mechanism, positing that producing language forces learners to move from semantic to syntactic processing, thereby noticing gaps in their linguistic knowledge and triggering cognitive processes essential for language development.

Active production and rehearsal are fundamental mechanisms through which podcasting enhances communication skills. Unlike passive listening, podcast creation requires learners to engage deeply with language by scripting, recording, editing, and refining their spoken content. This iterative process encourages repeated practice, which is essential for developing fluency, accuracy, and confidence in oral communication[46]. For example, students who repeatedly study podcast materials tend to take detailed notes and revisit content multiple times, which reinforces comprehension and speaking skills.

Moreover, podcasting fosters a learner-centered environment where students control the pace and style of their practice, allowing for personalized rehearsal that addresses individual weaknesses and strengths. This autonomy in practice leads to increased motivation and self-efficacy[47]. The ability to record and listen to one's own voice promotes self-monitoring and self-correction, critical components of effective communication skill development. As learners become more aware of their pronunciation, intonation, and pacing, they can adjust and improve their oral output before sharing it with an audience.

Recent research also highlights that podcast creation promotes collaborative learning, where students negotiate meaning and provide peer feedback during the production process, further enriching communication skills[48]. This social interaction combined with active rehearsal creates a comprehensive learning experience that supports both individual and interpersonal communication competencies.

Unlike passive listening, podcast creation requires students to actively plan, script, and produce spoken content. This iterative process promotes practice of target language structures by engaging learners in meaningful use of grammar, vocabulary, and discourse patterns within authentic communicative contexts. When students create podcasts, they must organize their ideas coherently, apply correct syntactic forms, and use appropriate lexical items, which deepens their understanding and internalization of the target language[5]. This active involvement contrasts with passive reception and leads to more effective language acquisition.

Moreover, the repeated rehearsal involved in podcast production allows learners to notice and self-correct errors, reinforcing accurate use of language structures over time. Research shows that structured podcast-based speaking instruction enhances learners' informal digital learning and academic language skills, supporting sustained practice of complex language forms[47]. The flexibility of podcasts also enables learners to revisit and refine their spoken output, fostering gradual mastery of target structures and increasing linguistic confidence.

Podcasts further expose learners to varied linguistic input and academic vocabulary, which supports the development of both general and discipline-specific language competence[49]. By integrating listening to authentic academic podcasts and producing their own, learners develop a richer lexical repertoire and improved grammatical accuracy, essential components of oral communication proficiency. Podcast creation transforms learners from passive recipients into active producers who practice and consolidate target language structures through planning, scripting, and iterative production, thereby enhancing their overall communication skills in meaningful contexts.

3.7. Audience awareness and authenticity

Theoretical Framework: This mechanism draws from Communicative Language Teaching Theory[50], which emphasizes authentic communication for meaningful purposes with real audiences. The awareness of an authentic audience transforms podcasting from an academic exercise into genuine communication, aligning with Authenticity Theory in language learning. Furthermore, Engagement Theory[51] posits that authentic, purposeful tasks increase motivation and cognitive engagement. When students know their podcasts will be heard by real listeners, they invoke pragmatic competence adjusting register, tone, and content for their audience which operationalizes[52] model of communicative competence. This authentic context activates higher-order cognitive and linguistic processes that simulated classroom activities often fail to elicit.

Knowing that their podcasts will be heard by classmates, teachers, or even a wider audience motivates students to communicate clearly and effectively, simulating real-world communication. Knowing that their podcasts will be heard by classmates, teachers, or even a wider audience motivates students to communicate clearly and effectively, closely simulating real-world communication scenarios. This awareness of an authentic audience encourages learners to tailor their language, tone, and content to meet listeners' expectations, which enhances the relevance and impact of their communication[52]. When students recognize that their work has a real audience, they tend to invest more effort in planning and delivering their messages, which fosters greater responsibility and engagement.

Moreover, podcasting promotes authenticity by providing learners with opportunities to produce genuine spoken language rather than rehearsed or artificial classroom dialogues. This authentic communication experience helps students develop pragmatic skills such as adjusting speech according to context, managing turn-taking, and using appropriate discourse markers[13]. The real or perceived presence of an audience also reduces the gap between classroom practice and real-life communication, preparing learners for diverse interpersonal and professional interactions.

Research further suggests that audience awareness in podcasting enhances learners' motivation and self-confidence, as they receive feedback not only from instructors but also peers and external listeners, creating a supportive community of practice[48]. This dynamic interaction mirrors authentic communicative exchanges and encourages continuous improvement. So, the knowledge of an authentic audience in podcasting heightens students' communication effectiveness and authenticity, bridging the gap between academic practice and real-world language use.

3.8. Collaborative learning

Theoretical Framework: This mechanism is deeply rooted in Social Constructivism[1], particularly the concept of the Zone of Proximal Development (ZPD), which emphasizes that learning occurs through social interaction with more knowledgeable others. Group podcasting creates collaborative zones where learners scaffold each other's development through negotiation, clarification, and co-construction of meaning. Collaborative Learning Theory[53] demonstrates that cooperative group work, when properly structured, enhances both individual and collective learning outcomes. The Interaction Hypothesis[54] in second language acquisition posits that conversational interaction, negotiation of meaning, and collaborative dialogue are crucial for language development all of which are inherent in collaborative podcast production. Additionally, Communities of Practice theory[55] explains how shared engagement in podcasting projects creates learning communities where knowledge and skills are socially constructed.

Group podcast projects encourage negotiation of meaning, turn-taking, and cooperative planning, fostering interpersonal communication skills. Group podcast projects provide a rich context for collaborative

learning by encouraging students to engage in negotiation of meaning, turn-taking, and cooperative planning key components of effective interpersonal communication. Working together to create a podcast requires learners to discuss ideas, clarify misunderstandings, and make collective decisions about content and delivery, which naturally fosters communication skills beyond individual practice[56]. This cooperative process helps students develop pragmatic competence, such as managing conversational flow and adapting language to group dynamics.

Moreover, collaborative podcasting promotes social interaction and peer learning, as students provide feedback to one another and reflect on different perspectives. Such interaction aligns with sociocultural theories of language learning, emphasizing that knowledge is co-constructed through social engagement[45]. Research shows that students involved in group podcast projects demonstrate improved negotiation skills and greater willingness to take communicative risks, which enhances both linguistic and interpersonal abilities[57].

Additionally, collaborative podcasting projects develop transferable skills like teamwork, time management, and problem-solving, which are valuable in academic and professional contexts[58]. The shared responsibility in planning, scripting, and editing podcasts creates a supportive environment where learners build confidence and motivation to communicate effectively. Thus, group podcast projects serve as an effective pedagogical tool that fosters interpersonal communication skills through meaningful collaboration, negotiation, and cooperative learning.

3.9. Multimodal integration

Theoretical Framework: This mechanism is grounded in Dual Coding Theory[59] which proposes that information processed through multiple sensory channels creates stronger, more interconnected memory representations. Podcast creation engages verbal (scripting), auditory (recording), and kinesthetic (editing) modalities, creating multiple encoding pathways. Cognitive Theory of Multimedia Learning[42] provides specific principles: the modality principle suggests that combining spoken words with visual elements (scripts) enhances learning over single-mode presentation, while the temporal contiguity principle explains why integrating production phases strengthens cognitive connections. Furthermore, Cognitive Load Theory[60] explains how well-designed multimodal tasks can reduce extraneous cognitive load while increasing germane load devoted to schema construction. Podcasting's integration of multiple modalities, when properly scaffolded, optimizes cognitive resources and facilitates processing deeper than single-mode language activities.

Combining speaking with writing scripts and editing audio in podcast creation enhances cognitive engagement and reinforces language learning by engaging multiple modes of communication simultaneously. This multimodal integration requires learners to process language both receptively and productively, deepening their understanding and retention of linguistic structures[17]. Writing scripts encourages careful selection of vocabulary and grammar, while speaking and editing audio develop oral fluency and technical skills, creating a holistic learning experience that goes beyond traditional single-modality instruction.

Research indicates that multimodal tasks like podcasting stimulate higher-order cognitive processes such as planning, problem-solving, and self-monitoring, which contribute to more effective language acquisition[28]. The integration of visual (script), auditory (recording), and kinesthetic (editing) elements engages different learning channels, catering to diverse learner preferences and promoting deeper cognitive processing. This synergy helps learners internalize language more robustly and transfer skills to real-world communication.

Furthermore, the editing process encourages learners to critically evaluate their own language use and make deliberate improvements, fostering metacognitive awareness and autonomous learning[17]. By

navigating between writing, speaking, and technical production, students develop a comprehensive set of communicative and digital literacy skills essential for the 21st-century learning environment. In this way, multimodal integration in podcasting enriches language learning by combining scriptwriting, oral production, and audio editing, thereby enhancing cognitive engagement and reinforcing linguistic competence.

3.10. Feedback and reflection

Theoretical Framework: This mechanism draws from Formative Assessment Theory[61], which demonstrates that feedback is most effective when it guides learners toward improvement through specific, actionable information. Podcasting enables both external feedback (from peers and instructors) and internal feedback (self-assessment through listening to recordings), creating a comprehensive feedback loop. Metacognitive Theory[62,63] explains how reflective practice monitoring, evaluating, and regulating one's own learning enhance skill development and transfer. When students listen to their own podcasts critically, they engage in metacognitive monitoring that develops self-regulatory skills essential for autonomous learning. Noticing Hypothesis[64,65] in second language acquisition posits that conscious attention to linguistic forms is necessary for learning; self-review of recordings facilitates noticing errors and gaps in knowledge. Finally, Reflective Practice Theory[66] emphasizes that reflection-on-action transforms experience into learning, which podcasting supports through iterative review and revision cycles.

Podcasts can be reviewed by peers and instructors, providing opportunities for constructive feedback and self-reflection. Podcasts offer valuable opportunities for learners to receive constructive feedback from peers and instructors, which is essential for improving communication skills. Reviewing podcast recordings allows students to critically evaluate their own performance and identify areas for improvement, fostering deeper self-reflection and metacognitive awareness[6]. This iterative feedback process helps learners refined their language use, pronunciation, and delivery, leading to more effective and confident communication.

The theoretical frameworks presented above converge to explain podcasting's effectiveness through complementary perspectives. Constructivist theories (Piaget, Vygotsky, Bruner) establish the foundational principle that active, authentic engagement drives learning which podcasting operationalizes through student-generated content. Cognitive theories explain the information processing advantages of multimodal production and iterative refinement. Social theories illuminate how group podcasting creates scaffolded learning environments and knowledge co-construction. Motivational theories (Self-Determination Theory, Engagement Theory) account for the affective benefits of authentic audiences and learner autonomy. Language acquisition theories (Output Hypothesis, Interaction Hypothesis, Noticing Hypothesis, Communicative Competence) provide discipline-specific explanations for linguistic development through production, negotiation, and awareness. Together, these frameworks form an integrated theoretical foundation demonstrating that podcasting is not merely a technological tool but a theoretically grounded pedagogical approach that aligns with fundamental principles of how humans learn, process information, acquire language, and develop communication competence. This theoretical convergence explains why empirical studies consistently demonstrate podcasting's effectiveness across diverse contexts and learner populations.

3.11. Practical applications and pedagogical strategies

Designing effective podcast assignments in language learning involves several key pedagogical strategies to maximize student engagement and skill development. It is essential to define specific communication skills targeted by the podcast task, such as fluency, pronunciation, or argumentative skills.

Clear objectives guide students' focus and help instructors assess progress effectively. For instance, a study integrating podcasts into an English language course emphasized setting clear goals for speaking and presentation skills, which resulted in improved student confidence and communicative competence.

Incorporating diverse podcast formats such as interviews, storytelling, debates, or informational episodes keeps learners motivated and allows practice of different communicative functions. Varied tasks encourage creativity and expose students to multiple discourse styles, enhancing both receptive and productive skills[47].

Providing templates, language support (e.g., useful phrases or vocabulary lists), and technical training on podcast production is crucial, especially for learners new to digital tools. Structured scaffolding reduces cognitive load and builds learner confidence. For example, a project-based learning study showed that offering script templates and step-by-step guidance enabled students to focus more on language use rather than technical challenges.

Encouraging pairs or group work fosters interaction, negotiation of meaning, and cooperative planning. Collaborative podcast projects promote interpersonal communication skills and peer learning, as students share responsibilities and provide feedback to one another. Research highlights that group podcasting enhances engagement and develops social and linguistic competencies simultaneously.

Integrating self- and peer-assessment components encourages learners to critically evaluate their own and others' podcasts. Reflection promotes metacognitive awareness and facilitates continuous improvement. Studies show that reflective activities linked to podcast creation increase learner autonomy and motivation[4]. Thoughtfully designed podcast assignments combining clear objectives, varied tasks, scaffolding, collaboration, and reflection create a rich pedagogical environment that supports language development and digital literacy.

3.12. Technical considerations

Using accessible recording tools such as smartphones and free apps makes podcast creation feasible for all learners, removing barriers related to cost and technical expertise. Modern smartphones provide sufficient audio quality for educational podcasts, and free applications like Audacity or GarageBand offer user-friendly interfaces for recording and editing[67]. This accessibility encourages wider participation and supports flexible, anytime-anywhere learning.

Teaching basic audio editing skills is essential to empower students to produce clear and polished podcasts. Simple editing techniques such as trimming pauses, reducing background noise, and adjusting volume improve the listening experience and help learners focus on content rather than technical distractions[2]. Providing step-by-step guidance or tutorials ensures students gain confidence in handling audio tools, which also builds digital literacy.

Finally, establishing platforms for sharing podcasts, whether through class websites, learning management systems, or dedicated podcast hosting services, facilitates distribution and peer interaction. Sharing podcasts in a centralized, accessible space promotes feedback, reflection, and community building among learners[68]. Additionally, hosting platforms often provide analytics that help instructors monitor engagement and tailor instruction accordingly. So, prioritizing accessible tools, basic editing instruction, and effective sharing platforms creates a supportive environment that maximizes the pedagogical benefits of podcasting.

3.13. Addressing challenges

To overcome student anxiety, podcast assignments should allow rehearsal and multiple recording takes. This reduces pressure by giving learners the chance to refine their speech before final submission, building confidence and improving performance. Ensuring equitable access to technology is crucial. Educators must provide or recommend accessible devices and software so all students can participate fully, regardless of their socioeconomic background. Providing ongoing support and feedback helps learners stay motivated and improve continuously. Regular guidance from instructors and constructive peer feedback creates a supportive learning environment that fosters skill development and reduces frustration.

4. Methodology

This literature review employed a systematic approach to identify, select, and analyze relevant studies on podcasting and communication skills development. The review focused on peer-reviewed empirical studies, theoretical articles, and meta-analyses published between 2010 and 2025, with emphasis on recent publications (2020-2025) to capture current pedagogical practices and emerging technologies.

The literature search was conducted across multiple academic databases including ERIC (Education Resources Information Center), Web of Science, Scopus, Google Scholar, ProQuest Education Database, and JSTOR. Additional sources were identified through forward and backward citation tracking of key studies, examination of systematic review bibliographies, and consultation of specialized journals in educational technology and applied linguistics.

Search terms were developed through an iterative process combining keywords related to three core concepts: (1) Technology: "podcast", "audio recording", "digital audio", "student-created media"; (2) Communication skills: "speaking skills", "oral communication", "oral proficiency", "listening comprehension", "communication competence", "fluency", "pronunciation"; and (3) Educational context: "language learning", "EFL", "ESL", "education", "pedagogy", "student engagement". Boolean operators (AND, OR) were used to combine terms strategically, for example: ("podcast" OR "audio recording") AND ("speaking skills" OR "oral communication") AND ("language learning" OR "education").

Inclusion criteria required studies to: (1) focus on student-created or student-consumed podcasts in educational settings; (2) examine outcomes related to communication skills, including speaking, listening, confidence, motivation, or learner autonomy; (3) be published in English in peer-reviewed journals, conference proceedings, or reputable academic repositories; (4) employ empirical methods (experimental, quasi-experimental, qualitative, or mixed methods) or provide substantive theoretical frameworks; and (5) provide sufficient methodological detail to assess quality and relevance.

Exclusion criteria eliminated studies that: (1) focused solely on teacher-created podcasts without student production or active engagement; (2) examined podcasting in non-educational contexts (e.g., commercial broadcasting); (3) lacked clear empirical evidence or theoretical grounding; (4) were not available in English; or (5) were duplicate publications or secondary reports of the same study.

The selection process involved multiple stages. Initial database searches yielded approximately 450 articles. After removing duplicates (n=120), titles and abstracts were screened for relevance, resulting in 180 potentially relevant studies. Full-text review of these articles against the inclusion/exclusion criteria resulted in 75 studies that formed the core evidence base for this review. Additional relevant studies (n=25) were identified through citation tracking and expert recommendations, bringing the final corpus to 100 studies.

The selected studies were analyzed using thematic synthesis methodology[16]. Key themes were identified inductively through repeated reading of study findings, with particular attention to: (1) types of communication skills developed through podcasting; (2) pedagogical mechanisms explaining podcasting's effectiveness; (3) student affective and motivational outcomes; (4) implementation challenges and success factors; and (5) theoretical frameworks supporting podcasting interventions. Findings were organized into conceptual categories to enable comprehensive synthesis and identification of patterns across diverse educational contexts and learner populations.

4.1. Case studies and examples

Case Study 1: Iranian EFL Learners

Learners producing podcasts of pair and group discussions improved speaking skills more than those only listening to podcasts or traditional instruction. notable case study involving Iranian EFL learners demonstrated that those who actively produced podcasts through pair and group discussions showed greater improvement in speaking skills compared to learners who only listened to podcasts or received traditional instruction. In this study, 60 upper-intermediate Iranian EFL learners were divided into experimental and control groups. The experimental groups created and uploaded podcasts of their discussions, while the control group followed conventional methods. Results from pre- and post-tests revealed that podcast production significantly enhanced speaking proficiency, with learners in the podcast groups outperforming others[69].

This improvement is attributed to the active engagement and collaborative interaction involved in podcast creation, which promotes authentic communication practice and reduces speaking anxiety. Additionally, integrating podcasting within a structured syllabus yielded better outcomes than using podcasts as standalone materials, highlighting the importance of pedagogical design in maximizing benefits[70].

This case study offers several actionable insights for educators implementing podcasts. First, active production should be prioritized over passive consumption while listening to podcasts has value, requiring students to create content yields superior outcomes. Educators should design assignments that necessitate oral production, such as discussion podcasts, interviews, or debate formats. Second, collaborative formats (pairs or small groups) should be deliberately incorporated to leverage peer scaffolding and negotiation of meaning. Group composition matters: heterogeneous groups pairing stronger and weaker speakers can maximize ZPD benefits. Third, podcast activities must be integrated into the curriculum systematically rather than used as isolated supplementary materials. This means: (a) aligning podcast tasks with course learning objectives, (b) providing adequate class time for planning and production, (c) establishing clear assessment criteria, and (d) incorporating podcast creation into graded assignments. Fourth, scaffolding is essential, especially for novice podcast creators provide templates for scripting, technical tutorials, and examples of successful podcasts. Fifth, feedback loops should be built in through peer review sessions, instructor comments on drafts, and opportunities for revision. Finally, the finding that experimental groups outperformed control groups suggests podcasting can be more effective than traditional oral practice when properly implemented, making it a valuable addition to speaking curricula in EFL/ESL contexts.

4.2. Practical implications

The success of the Iranian EFL learners demonstrates the operation of multiple mechanisms identified in this review. First, Active Production and Rehearsal (Mechanism 1) was central to outcomes: learners who actively created podcasts through pair and group discussions engaged in sustained oral production, iterative rehearsal, and self-correction, consistent with Deliberate Practice Theory[44] and the Output Hypothesis[45]. Unlike passive listeners, active producers practiced target language structures repeatedly, leading to

measurable speaking improvements. Second, Collaborative Learning (Mechanism 3) played a crucial role the pair and group format required negotiation of meaning, turn-taking, and cooperative planning, operationalizing Vygotsky's Zone of Proximal Development through peer scaffolding. Third, Audience Awareness (Mechanism 2) motivated learners to communicate clearly, as podcasts would be heard by classmates and instructors, transforming the activity into authentic communication rather than classroom exercise. Fourth, Feedback and Reflection (Mechanism 5) occurred as learners reviewed their recordings, identified areas for improvement, and received peer and instructor feedback. The study's finding that structured integration within the syllabus produced better outcomes than standalone use[70] underscores the importance of pedagogical design—when podcast activities are systematically incorporated with clear objectives and adequate scaffolding, the mechanisms operate more effectively.

4.3. Mechanism alignment analysis

This case study provides valuable guidance for implementing podcasting in secondary education settings, particularly in resource-limited contexts. First, pronunciation and fluency development should be explicitly targeted through podcast activities, assign tasks requiring clear articulation and encourage multiple recording attempts until students achieve satisfactory pronunciation. Providing pronunciation rubrics and self-assessment checklists helps students focus on these specific skills. Second, self-assessment should be structured and scaffolded: teach students what to listen for (e.g., pronunciation accuracy, appropriate pacing, clear articulation), provide guided reflection prompts, and model self-evaluation using sample podcasts. Third, to boost classroom participation more broadly, use podcasting as a bridge students who gain confidence through podcast creation often become more willing to participate in face-to-face discussions. Consider a progression: solo podcasts → pair podcasts → group podcasts → live presentations. Fourth, leverage accessible technology: smartphones with basic recording apps are sufficient; high-end equipment is unnecessary. Provide technical support sessions early in the process to reduce frustration and ensure equity of access. Fifth, create a supportive peer feedback culture by establishing respectful feedback norms, using structured peer review protocols, and celebrating improvement rather than perfection. Sixth, for younger or less proficient learners, begin with shorter, more structured tasks (e.g., 1–2-minute podcasts with provided prompts) and gradually increase complexity and autonomy. Finally, integrate podcast creation with classroom content rather than treating podcasts as separate activities, have students create podcasts that review unit content, explain concepts to peers, or practice dialogues related to curriculum topics, thereby reinforcing both language skills and subject matter knowledge.

4.4. Practical implications

The Indonesian high school case demonstrates how podcasting mechanisms operate in secondary education contexts with younger learners. The significant improvements in pronunciation and fluency directly reflect Active Production and Rehearsal (Mechanism 1) repeated recording attempts allowed students to notice pronunciation errors and refine their articulation, consistent with the Noticing Hypothesis[64]. The emphasis on self-assessment mentioned in the study aligns with Feedback and Reflection (Mechanism 5): students listened critically to their own recordings, engaging metacognitive monitoring[62] that enhanced self-awareness and autonomous learning. The increased classroom participation indicates that podcasting reduced speaking anxiety, a key affective outcome of the rehearsal processes the low-pressure environment of recording privately before sharing publicly built confidence, as predicted by deliberate practice theory. Multimodal Integration (Mechanism 4) was also operative: students wrote scripts, practiced speaking, and edited audio, engaging multiple cognitive channels that reinforced learning through Dual Coding[59]. The study mentions increased motivation through podcast assignments reflects Audience Awareness (Mechanism 2) and Engagement Theory[51] knowing their work would be shared with peers

created authentic communicative purpose. Finally, the collaborative dimension emerged through peer feedback during the production process, operationalizing Collaborative Learning (Mechanism 3). The case illustrates that even in contexts with potentially limited technological infrastructure (Indonesian high schools), accessible tools (smartphones) can effectively deliver podcasting benefits when pedagogically well-designed.

4.5. Mechanism alignment analysis

Case Study 2: Indonesian High School Students

Podcast media significantly enhanced students' speaking performance, particularly in pronunciation and fluency, while increasing classroom participation. A recent study with Indonesian high school students demonstrated that using podcast media significantly improved students' speaking performance, particularly in pronunciation and fluency. The podcast assignments encouraged repeated practice and self-assessment, which helped learners refine their oral skills effectively. Additionally, the integration of podcasts increased classroom participation by motivating students to engage more actively in speaking activities and peer collaboration, fostering a more interactive learning environment. This case highlights podcasts as a powerful tool not only for enhancing specific speaking skills but also for boosting learner motivation and involvement in language classrooms.

Drawing on lessons from both case studies, an effective implementation framework for podcasting in communication skills instruction should include the following components: (1) Clear Learning Objectives: explicitly define which communication skills (pronunciation, fluency, vocabulary, confidence) the podcast activity targets, as both cases succeeded partly due to clear focus; (2) Appropriate Task Design: match podcast format and complexity to learner proficiency and age—discussions and debates for advanced adult learners, structured prompts and templates for younger or less proficient students; (3) Systematic Integration: embed podcast activities within the curriculum with dedicated class time, as standalone or optional activities show reduced effectiveness[70]; (4) Progressive Scaffolding: begin with highly structured, shorter tasks and gradually increase autonomy and complexity as students develop skills and confidence—the Indonesian case's progression from simple to complex tasks exemplifies this principle; (5) Multiple Mechanism Activation: design activities that engage multiple mechanisms simultaneously—for example, collaborative podcasts activate Mechanisms 1, 2, 3, and 5 concurrently; (6) Comprehensive Feedback Systems: establish multiple feedback channels including self-assessment (via recording review), peer feedback (through structured protocols), and instructor feedback (formative and summative)—both cases attribute success partly to robust feedback; (7) Technical Support: provide accessible tools, clear instructions, and troubleshooting assistance, especially critical in resource-limited contexts; (8) Motivation and Engagement: leverage authentic audiences (classmates, school community, online platforms) to create genuine communicative purpose; (9) Assessment Alignment: develop rubrics that assess targeted skills appropriately and communicate criteria clearly to students; (10) Continuous Improvement: collect student feedback, monitor outcomes, and iteratively refine podcast activities based on evidence of effectiveness. This framework, informed by successful implementations across diverse contexts, provides a blueprint for educators seeking to optimize podcasting's benefits.

4.6. Integrated implementation framework

The two cases illustrate how podcasting can be adapted to different educational contexts while maintaining effectiveness. In university settings (Iranian case), longer, more complex podcast formats featuring discussions and debates may be appropriate, leveraging students' greater linguistic proficiency and cognitive maturity. Collaborative formats work well here because adult learners possess the interpersonal

and planning skills needed for effective group work. Assessment can focus on higher-order skills like argumentation, critical analysis, and discourse organization. In contrast, secondary education contexts (Indonesian case) may benefit from shorter, more structured podcast tasks with clear templates and scaffolding. Individual or pair formats may work better initially, with progression to larger groups as students develop confidence and skills. Assessment should emphasize foundational skills like pronunciation, fluency, and vocabulary use. In resource-limited contexts, both cases demonstrate that sophisticated equipment is unnecessary smartphones and free apps suffice. However, technical support and clear tutorials become even more critical in contexts where students have less prior technology experience. Finally, curricular integration strategies must match institutional structures: in university EFL programs with dedicated speaking courses, podcasts can be extensively integrated as in the Iranian case, whereas in secondary schools with packed curricula, podcasts may need to serve dual purposes developing both language skills and content knowledge—as suggested by the Indonesian case's focus on curriculum-aligned topics.

4.7. Context-specific adaptations

Examining these two case studies together reveals important patterns in how podcasting mechanisms operate across diverse contexts. Despite differences in educational level (university vs. high school), geographical location (Iran vs. Indonesia), and learner characteristics (upper-intermediate EFL adults vs. secondary school students), both cases demonstrate consistent activation of the five core mechanisms identified in this review. This consistency supports the theoretical framework's validity and suggests that podcasting's effectiveness is robust across varied implementations. Both cases show that Active Production and Rehearsal (Mechanism 1) is foundational whether through pair discussions (Iranian case) or individual recording with self-assessment (Indonesian case), the act of producing oral language repeatedly leads to measurable skill improvements. Both cases also emphasize the critical role of Feedback and Reflection (Mechanism 5): the Iranian study noted peer and instructor feedback, while the Indonesian study highlighted self-assessment through listening to recordings. This convergence suggests that feedback loops—whether external or internal are essential components of effective podcast-based instruction. Differences between the cases are equally instructive: the Iranian study's emphasis on collaborative formats (pairs and groups) more explicitly operationalized Collaborative Learning (Mechanism 3), while the Indonesian study's focus on pronunciation and fluency improvements more directly illustrated the benefits of Multimodal Integration (Mechanism 4) and repeated rehearsal. These complementary emphases suggest that podcasting's flexibility allows educators to foreground different mechanisms depending on pedagogical goals and learner needs.

4.8. Cross-Case synthesis and lessons learned

Table 1. Mechanism Alignment Across Case Studies.

Mechanism	Theoretical Basis	Iranian EFL Case Evidence	Indonesian HS Case Evidence
1. Active Production & Rehearsal	Constructivism (Piaget), Deliberate Practice (Ericsson), Output Hypothesis (Swain)	Pair/group discussions required sustained oral production; active producers improved more than passive listeners	Multiple recording attempts allowed pronunciation refinement; repeated practice increased fluency
2. Audience Awareness & Authenticity	CLT (Hymes), Authenticity Theory (van Lier), Engagement Theory	Knowing podcasts would be heard by classmates/instructors motivated clear communication	Sharing with peers created authentic purpose; increased motivation to communicate effectively
3. Collaborative Learning	Social Constructivism (Vygotsky ZPD), Interaction Hypothesis (Long)	Pair/group format required negotiation, turn-taking, cooperative planning; peer	Peer feedback during production; collaborative review sessions built

Mechanism	Theoretical Basis	Iranian EFL Case Evidence	Indonesian HS Case Evidence
		scaffolding	community
4. Multimodal Integration	Dual Coding (Paivio), Multimedia Learning (Mayer), Cognitive Load (Sweller)	Combined scripting, speaking, and editing engaged multiple modalities	Writing scripts, recording speech, editing audio reinforced learning through multiple channels
5. Feedback & Reflection	Metacognition (Flavell), Noticing (Schmidt), Reflective Practice (Schön)	Students reviewed recordings, received peer/instructor feedback, identified improvements	Self-assessment through listening to recordings; metacognitive monitoring of pronunciation

Table 1. (*Continued*)

Table 1 provides robust empirical support for the theoretical mechanisms proposed in this review. Both cases unequivocally demonstrate that active production (Mechanism 1) is the central driver of communication skills development learners who created podcasts consistently outperformed those who passively consumed them or received traditional instruction. This finding validates the Output Hypothesis and constructivist principles that emphasize active engagement over passive reception. The consistent presence of feedback and reflection (Mechanism 5) across both contexts whether through instructor comments, peer review, or self-assessment via recording playback underscores metacognitive monitoring's critical role. Students in both cases attributed improvements to the ability to "hear themselves" and identify areas needing work, confirming the Noticing Hypothesis's prediction that conscious attention to linguistic forms facilitates acquisition. The Iranian case's superior outcomes in collaborative formats provide strong evidence for Mechanism 3 (Collaborative Learning), validating Vygotsky's Zone of Proximal Development and Long's Interaction Hypothesis peer scaffolding and negotiation of meaning significantly enhanced learning beyond individual work. The Indonesian case's emphasis on pronunciation and fluency improvements through repeated recording exemplifies Mechanism 1 combined with Mechanism 4 (Multimodal Integration), confirming that engaging multiple modalities (writing scripts, speaking, listening to playback, editing) creates stronger learning outcomes than single-mode practice, as predicted by Dual Coding Theory and Multimedia Learning Theory. Finally, both cases indirectly support Mechanism 2 (Audience Awareness) through reports of increased motivation and engagement when students knew their work would be publicly shared this authentic communicative purpose transformed dynamic learning from academic exercise to genuine communication, consistent with Communicative Language Teaching principles and Engagement Theory[51]. Importantly, the success of podcasting across very different contexts (university vs. secondary school; Iran vs. Indonesia; adult vs. adolescent learners; high-resource vs. limited-resource settings) suggests that the mechanisms are robust and generalizable, not context-dependent artifacts. This cross-context validity strengthens confidence that the theoretical framework accurately captures podcast's core effectiveness drivers.

4.9. Broader implications for education

Promoting Learner Autonomy

Podcasting empowers students to take charge of their learning, fostering independence and responsibility. Podcasting empowers students to take charge of their own learning by allowing them to plan, create, and review their spoken content independently. This process fosters greater learner autonomy as students become responsible for managing their practice, setting goals, and evaluating their progress. By engaging actively and making decisions about their learning, learners develop self-discipline and motivation, essential qualities for lifelong language development.

4.10. Supporting diverse learners

Podcasts accommodate various learning styles and allow learners to work at their own pace, making them especially beneficial for shy or reluctant speakers. By providing a low-pressure, flexible environment, podcasts enable these students to practice speaking without the anxiety of real-time interaction, boosting confidence and participation. This personalized approach helps meet diverse learner needs and promotes inclusive language learning.

4.11. Enhancing digital literacy

Students gain skills in digital communication, audio production, and online publishing. Podcasting helps students develop essential digital literacy skills, including digital communication, audio production, and online publishing. By creating podcasts, learners gain hands-on experience with digital tools, learning how to record, edit, and distribute audio content effectively. This process builds their ability to navigate digital environments, critically evaluate information, and produce multimedia materials key competencies in today's digital world[71].

Moreover, podcasting encourages creativity and collaboration, as students often work together to plan and produce episodes, enhancing both technical and social digital skills. Educators have observed that podcast projects increase student engagement and confidence in using technology, preparing them for academic and professional contexts that demand digital proficiency[72]. Thus, integrating podcasts into education not only supports language learning but also equips students with valuable digital literacy skills necessary for the 21st century.

5. Discussion and conclusion

Creating and sharing podcasts is a highly effective educational practice for enhancing student communication skills. Empirical research consistently shows improvements in speaking fluency, pronunciation, grammatical accuracy, listening comprehension, confidence, and self-awareness. The active, authentic, and collaborative nature of podcasting motivates learners and supports diverse communication competencies. Educators are encouraged to integrate student-created podcasts thoughtfully, balancing technical training with pedagogical support. Future research should explore longitudinal effects, podcasting in different cultural contexts, and integration with emerging technologies like AI.

Educators are encouraged to integrate student-created podcasts thoughtfully, ensuring a balance between technical training and pedagogical support to maximize learning outcomes. Providing scaffolding in audio production and clear communication objectives helps learners focus on language development while navigating digital tools effectively. Future research should investigate the longitudinal effects of podcasting on language proficiency, its application across different cultural contexts, and its integration with emerging technologies such as artificial intelligence to further personalize and enhance learning experiences.

Policymakers should recognize podcasting as an evidence-based, cost-effective strategy for developing 21st-century communication competencies aligned with national and international educational standards (e.g., CEFR descriptors for speaking skills, Common Core State Standards for speaking and listening, UNESCO digital literacy frameworks). Support systemic implementation through targeted funding programs for podcasting initiatives, prioritizing grants that emphasize pedagogical innovation over technological acquisition and requiring evidence of alignment with the five validated mechanisms identified in this review. Establish quality standards and guidelines for digital communication skill development that explicitly recognize podcasting as a legitimate instructional approach, include podcasting competencies in teacher certification requirements (ensuring pre-service and in-service teachers receive training), and incorporate

podcast-based assessments into standardized testing where authentic communication measurement is needed. Address equity and access systemically by funding programs that provide devices and connectivity to under-resourced schools, supporting community partnerships (libraries, community centers) offering recording spaces and technical assistance, and ensuring that podcasting opportunities are available across socioeconomic contexts not just in well-resourced schools. Promote research and evaluation by funding rigorous studies examining podcasting's effectiveness across diverse populations and contexts, supporting longitudinal research tracking long-term impacts on communication competence and professional outcomes, and disseminating evidence-based practices through accessible channels (practitioner journals, workshops, online repositories). Consider broader workforce development implications: communication skills developed through podcasting clarity, audience awareness, collaborative production, giving and receiving feedback, digital literacy are highly valued in modern labor markets across industries; podcasting thus represents preparation for professional contexts requiring multimodal communication competence. Finally, facilitate knowledge exchange through regional or national conferences focused on podcasting pedagogy, online communities of practice connecting educators implementing podcasting, and clearinghouses of validated resources (lesson plans, assessment rubrics, research summaries) reducing barriers to adoption.

5.1. For educational policymakers and funding agencies

Administrators should invest in professional development for faculty focusing not on technical training alone but on pedagogical integration workshops should address how to design effective podcast assignments, implement the five mechanisms, provide meaningful feedback, and assess communication skills authentically. Provide infrastructure support including dedicated server space or institutional podcast hosting accounts (platforms like SoundCloud for Education or institutional learning management system integration), accessible recording spaces (quiet rooms with basic soundproofing for students without suitable home environments), and loaner equipment programs (headsets, microphones, tablets) ensuring equity of access particularly for under-resourced students. Establish institutional policies that recognize podcasting as legitimate academic work count podcast creation toward course credit hours equivalent to traditional assignments, include podcasting competencies in program learning outcomes, and value podcasting scholarship (pedagogical research on podcasting) in faculty evaluation for promotion and tenure. Create showcase opportunities celebrating student podcast work through end-of-term listening events, podcast festivals, institutional podcast channels featuring exemplary work, and competitions with prizes recognizing outstanding communication skills demonstrated through podcasting. Address intellectual property and privacy considerations by developing clear policies about podcast ownership (typically students retain copyright with institution granted educational use license), consent protocols for interviews and recordings featuring others, and privacy options allowing students to use pseudonyms or restrict distribution if desired. Monitor implementation through program assessment collecting data on learning outcomes, student satisfaction, faculty adoption rates, and analyzing patterns to identify successful practices and areas needing additional support. Finally, consider resource allocation strategically: podcasting requires relatively modest technological investment (existing smartphones and free software suffice) but substantial pedagogical investment (faculty time for training, assignment design, feedback provision)—budget accordingly with emphasis on human capacity building rather than expensive equipment purchases.

5.2. For educational administrators and technology coordinators

Curriculum designers should integrate podcasting longitudinally across multiple courses or units rather than as one-off activities, allowing students to develop podcasting competencies progressively while repeatedly engaging the five core mechanisms. Establish clear learning progressions: foundational courses focus on pronunciation and fluency through short individual podcasts; intermediate courses incorporate

collaborative discussions and interviews developing turn-taking and negotiation skills; advanced courses feature complex formats like debates, documentary-style reports, and analytical commentaries requiring higher-order communication competencies. Design authentic, meaningful tasks that serve dual purposes—developing both communication skills and content knowledge—by having students create podcasts that explain course concepts, interview experts, review literature, or analyze case studies, thereby increasing efficiency in packed curricula. Develop comprehensive assessment frameworks with rubrics that address content, delivery, and technical quality proportionally based on course emphases, incorporate both process and product assessment (e.g., scripts, peer feedback given/received, reflection journals alongside final podcasts), and use portfolio approaches where students submit multiple podcasts over time demonstrating growth. Create shared resources across a program including template libraries for different podcast formats (interview, discussion, narrative, informational), self-assessment checklists aligned with learning objectives, technical tutorial videos, and exemplar podcasts from previous students (with permission) illustrating different quality levels. Establish pedagogical guidelines for instructors new to podcasting specifying recommended task structures, scaffolding strategies, time allocation (typically 2-3 weeks for a significant podcast project including planning, production, feedback, and revision), and troubleshooting solutions for common challenges. Consider interdisciplinary applications: podcasting develops transferable communication skills valuable across disciplines, so explore cross-curricular projects where language students collaborate with subject specialists (science students explaining research, history students creating documentary-style narratives) enriching both language development and content understanding.

5.3. For curriculum designers and program coordinators

Teachers should prioritize active podcast creation over passive consumption, as evidence consistently shows that students who produce podcasts achieve superior communication results compared to those who only listen[20,21]. Begin with short, highly structured tasks (2-3 minutes) using templates that guide scripting, then progressively increase length and autonomy as students develop confidence and skills. Incorporate collaborative formats deliberately—pair or small group podcasts leverage peer scaffolding consistent with Vygotsky's Zone of Proximal Development, with heterogeneous grouping (mixing proficiency levels) maximizing learning benefits. Design authentic communicative purposes by establishing real audiences: share podcasts with other classes, post them on school websites, or create a class podcast channel that parents and community members can access, thereby activating the audience awareness mechanism that drives motivation and effort. Build comprehensive feedback systems incorporating self-assessment (students listen to their recordings using guided reflection prompts), peer feedback (through structured protocols with specific criteria), and instructor formative feedback focusing on targeted communication skills. Integrate podcast activities systematically into the curriculum rather than treating them as optional supplements—align tasks with learning objectives, provide dedicated class time for production, and incorporate into assessment frameworks. For technical support, leverage accessible tools (smartphones with free apps like Audacity or GarageBand suffice), provide step-by-step tutorials at the beginning of the term, and establish peer technical support networks where more proficient students assist others. To address speaking anxiety, allow multiple recording attempts without penalty, create a supportive classroom culture that celebrates improvement over perfection, and consider a progression from private submissions (teacher only) to limited sharing (small groups) to public posting (whole class or broader). Finally, scaffold explicitly for different proficiency levels: beginners need templates, vocabulary support, and short tasks; intermediate learners benefit from partial structure with more choice; advanced learners can handle open-ended formats requiring planning and creativity.

5.4. For classroom teachers and language instructors

This review's synthesis of empirical evidence and theoretical frameworks yields actionable guidance for educators, administrators, curriculum designers, and policymakers seeking to implement podcasting effectively in communication skills instruction. The following recommendations are grounded in the five validated mechanisms (active production, audience awareness, collaborative learning, multimodal integration, feedback and reflection) and evidence from successful implementations across diverse contexts.

5.5. Practical implications for educational practice

Analysis of successful implementations across contexts reveals several critical success factors. First, pedagogical focus over technological focus: institutions and instructors prioritizing meaningful communication tasks over technical sophistication achieve better outcomes simple recordings with strong pedagogical design outperform technically polished products with weak communicative purpose. Second, systematic integration over supplemental use: podcasting incorporated into curriculum with clear objectives, adequate time, and formal assessment yields superior results compared to optional or standalone activities[70]. Third, comprehensive support systems: successful implementations provide technical assistance, pedagogical consultation, peer networks, and troubleshooting resources recognizing that challenges arise in both technical and instructional domains. Fourth, authentic purposes and real audiences: when students create podcasts for genuine communicative purposes (informing, entertaining, persuading actual listeners) rather than mere academic compliance, motivation increases and communication quality improves significantly. Fifth, balanced assessment: rubrics addressing content (message quality, organization, evidence), delivery (pronunciation, fluency, engagement), and process (collaboration, revision, reflection) in appropriate proportions, avoiding over-emphasis on any single dimension support holistic communication development. Sixth, iterative improvement culture: treating podcasting skills as developing over time through practice and feedback rather than expecting polished products immediately creates psychologically safe environments where students take risks, experiment, and learn from errors. Seventh, equity and inclusion awareness: actively addressing access barriers (devices, connectivity, private recording spaces), accommodating diverse learning needs (providing captions, alternative formats, adjustable deadlines), and culturally responsive pedagogy (valuing diverse communication styles, multilingual resources, varied content topics) ensure podcasting benefits all students not just privileged subgroups. Institutions attending to these critical success factors position podcasting initiatives for sustainable positive impact on student communication competence. The extensive adoption of Mobile Phone Use (MPU) has garnered growing attention in all areas, including academics, due to its profound impact on student life[73].

5.6. Critical success factors

For institutions beginning podcast implementation, a phased approach maximizes success. Phase 1 (Pilot Semester): Start with volunteer faculty teaching 1-2 courses, implement one carefully designed podcast assignment following the evidence-based framework from this review, provide intensive support (instructional designer assistance, peer observations, troubleshooting consultation), collect comprehensive data (student learning outcomes, satisfaction surveys, faculty experiences), and document lessons learned. Phase 2 (Expansion Semester): Based on pilot insights, refine assignment design and support structures, expand to 5-10 additional faculty through professional development workshops led by successful pilot instructors, establish peer mentoring networks, develop shared resource repository, and continue systematic data collection. Phase 3 (Program Integration): Integrate podcasting into curriculum formally (required in certain courses, optional in others), establish institutional infrastructure (hosting platform, recording spaces, equipment loans), create ongoing professional development offerings (workshops, consultation circles,

teaching circles), develop comprehensive assessment framework program-level, and publish evidence of effectiveness internally and externally. Phase 4 (Sustainability and Innovation): Institutionalize support structures (dedicated staff, permanent budget allocations), encourage pedagogical innovation through internal grants or teaching awards recognizing creative podcasting applications, contribute to teaching and learning through conference presentations and publications, and continuously refine practices based on accumulated evidence and emerging research. This phased approach allows iterative learning, evidence-based refinement, and sustainable scaling while minimizing risks associated with rapid, large-scale implementation.

Conflict of interest

The authors declare no conflict of interest.

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