# Learning by Listening: A Narrative Review of Podcast-Based Microlearning
**(with an Application to Frontline Staff Training)**
November 27, 2025


## Abstract
Audio podcasts and other spoken-word formats are increasingly used for education and professional development, yet their specific affordances for workplace microlearning remain under-synthesised. This narrative review integrates evidence from research on educational podcasting, microlearning, conversational multimedia design, and multilingual training. Studies across higher and medical education show that podcasts are feasible, well-accepted, and at least as effective as traditional formats for supporting knowledge acquisition and behaviour change, particularly when used as supplements rather than stand-alone replacements (Cho et al., 2017; Kelly et al., 2022; Engzell et al., 2025). Microlearning research indicates that short, targeted learning units—typically 3–10 minutes—improve retention, completion, and transfer when aligned to specific objectives (Monib et al., 2024; Shail, 2019; Nikou & Economides, 2018). Multimedia learning studies further suggest that conversational narration in a human voice enhances engagement and learning compared with formal, impersonal scripts (Mayer, 2021; Rey, 2013). Finally, research on language-friendly safety training and local language communication indicates that workers understand and retain information better when training content is localised to their native language and context (Evia, 2011; Arif et al., 2021; Dungcik et al., 2024).

The discussion synthesises these strands into design principles for audio-based microlearning. The paper concludes that podcast-based microlearning, when implemented as brief, native-language, conversational episodes embedded in a broader learning ecosystem, is theoretically well-grounded and empirically promising for frontline training.

## 1. Introduction

Organisations face persistent challenges in ensuring that frontline employees keep pace with new products, procedures, and customer-experience standards. High staff turnover, limited training time, and multilingual workforces constrain the impact of traditional classroom or e-learning approaches (Blume et al., 2010). At the same time, mobile devices and on-demand media consumption have normalised learning "on the go," including through podcasts and other audio-first formats.

Educational podcasting has grown rapidly in higher and medical education, with thousands of series providing discipline-specific content (Cho et al., 2017; Kelly et al., 2022). In parallel, microlearning has become a popular design paradigm in corporate and higher education, emphasising short, focused learning units designed for just-in-time application (Monib et al., 2024; Rof et al., 2024).

This paper asks: **What does existing research tell us about the impact of listening to podcasts and similar audio formats on learning, particularly when deployed as microlearning, and how might these insights inform the design of frontline staff training?** The review first summarises empirical evidence on podcasts and learning, microlearning and episode length, conversational narration, and native-language delivery. It then discusses cross-cutting implications and limitations.

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## 2. Method

This paper employs a **narrative literature review**. Databases including Scopus, Web of Science, PubMed, and ERIC, alongside targeted web searches, were used to identify:

1. Reviews and empirical studies on **podcasts in education**.
2. Reviews and empirical studies on **microlearning** and **short-form digital lessons**.
3. Research on **conversational style and voice** in multimedia learning.
4. Studies on **language-friendly / localised training** in workplace or safety contexts.

Priority was given to systematic reviews, meta-analyses, and scoping reviews published in peer-reviewed journals after 2005, supplemented by influential theoretical works (e.g., Mayer's multimedia learning theory) and selected practitioner reports where relevant (e.g., podcast completion statistics, microlearning duration norms). The goal is not exhaustiveness but synthesis of convergent findings that are robust and relevant to audio-based microlearning for adults.

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## 3. Findings: Empirical Evidence on Audio Podcasts and Learning

### 3.1 Podcasts as a learning medium

Several reviews and empirical studies indicate that podcasts are **feasible, acceptable, and often effective** as educational tools:

- **Higher education and general HE review.** McLoughlin and Lee (2007) systematically reviewed early evidence on podcasting in higher education and concluded that podcasts can support flexible, student-centred learning, particularly for revision and reinforcement, while noting small sample sizes and methodological limitations.
- **Medical education review.** Cho et al. (2017) reviewed 84 articles on medical education podcasts. Using Kirkpatrick's model, they found substantial evidence for positive learner reactions and perceived usefulness, with a smaller but growing body of studies showing improved test scores or self-reported behaviour change. However, rigorous evidence on patient or organisational outcomes remained scarce.
- **Scoping review.** Kelly et al. (2022) conducted a scoping review of podcasts in medical education and reported that learners valued podcasts for **portability, efficiency, and ability to fit into busy schedules**, with several studies showing gains in knowledge and self-reported behavioural intentions compared with no intervention or text-only controls.
- **Recent higher education work.** Engzell et al. (2025) synthesised research on podcasts in higher education and highlighted their role in fostering student engagement, perceived connectedness with instructors, and support for non-traditional learners; they concluded that podcasts are effective as **supplements** to other teaching methods rather than full replacements.

Across these reviews, podcasts are consistently associated with **high learner satisfaction** and **positive attitudes**, and in many cases with **equal or improved knowledge outcomes** relative to traditional lectures or readings when used as a complementary resource.

### 3.2 Microlearning and the importance of short episodes

Microlearning research addresses the **duration and granularity** of digital learning units:

- **Systematic review.** Monib et al. (2024) analysed 40 microlearning studies in education and corporate contexts. They define microlearning as "targeted, action-oriented, bite-sized content" delivered within a short period—typically a **few seconds to a few minutes**—and conclude that microlearning has **positive effects on cognitive outcomes (knowledge, retention, transfer), behavioural outcomes (performance, completion rates, engagement), and affective outcomes (motivation, satisfaction, self-efficacy)**.

- **HE microlearning effectiveness.** Rof et al. (2024) examined a business-education microlearning platform and found that learners' satisfaction and perceived effectiveness depended strongly on the **relevance to current job roles** and reasons for enrolment, but that combining many short lessons into a larger program can support substantial learning gains.
- **Mobile microlearning studies.** Shail (2019) reviewed microlearning on mobile applications and reported improved knowledge retention and work performance when content is delivered in **short, focused units** accessible in small time windows. Nikou and Economides (2018) found that mobile-based microlearning and assessment improved high-school students' performance and motivation relative to traditional methods.

Industry and instructional-design guidance generally converges on **3–10 minutes per unit** as an optimal range that aligns with working-memory limits and modern attention spans (LearningQ, n.d.; Growth Engineering, 2025; LearningQ.org, n.d.). Shorter "micro-pods" or "microlectures" are thus consistent with both cognitive theory and observed learner behaviour.

### 3.3 Conversational narration and human voice

The **Cognitive Theory of Multimedia Learning** provides robust evidence that **how** spoken content is scripted and delivered matters:

- **Personalization principle.** Mayer's personalization principle states that people learn better from multimedia lessons when words are in a **conversational rather than formal style** (Mayer, 2021). Experimental studies show higher transfer and retention when narration uses first/second-person pronouns ("you," "we") and informal phrasing instead of impersonal, textbook-like language (Mayer et al., 2004; Rey, 2013).
- **Voice principle.** The voice principle holds that learning is improved when narration is delivered in a **natural human voice** rather than a machine voice, likely because human speech cues elicit social responses that deepen cognitive processing (Mayer, 2021).

Together, these findings suggest that **dialogue-like, human-sounding audio**—as commonly found in conversational podcasts—should be more engaging and effective for learning than monotone or overly formal voice-overs.

### 3.4 Native-language and localised training

Although much podcast research is in English-language higher education, workplace-learning and safety-training literature emphasises the importance of **language-friendly design**:

- **Language-friendly safety training frameworks.** Arif et al. (2021) describe the ConSafe4All framework, which develops safety training modules tailored to workers with limited host-country language proficiency in the construction sector. The framework emphasises the need to reduce misunderstandings by integrating workers' native languages and visual supports into training.

- **Localised computer-based training.** Evia (2011) reports that Spanish-speaking Hispanic construction workers reacted positively and retained knowledge from safety training modules explicitly **localised to their language and cultural context**, rather than simply translated from English.
- **Local language and public understanding.** Dungcik et al. (2024) show that using local languages in public risk communication increases perceived familiarity and reduces psychological distance compared with using only national or official languages, supporting better understanding of complex information.

While these studies are not podcast-specific, they suggest that **native-language or localised content improves comprehension, confidence, and perceived relevance**, especially in diverse or migrant workforces.

### 3.5 Engagement and completion behaviour in podcasts

Several large-scale podcast analytics reports—though primarily from marketing and media rather than formal education—highlight unusually high completion and engagement rates:

- Edison Research data analysed by Descript indicate that about **93% of people who start a podcast episode listen to "most or all" of it**, an unusually high completion rate compared with other digital media.
- Industry benchmarks suggest that average podcast shows achieve **approx. 75–80% episode completion**, and that this is considered a strong level of sustained engagement (Cohost, 2024; Loopex Digital, 2024).
- Podcast listeners report spending **around 7 hours per week** listening to podcasts, often while commuting, doing chores, or exercising (Neal Schaffer, 2025).

Although these data are not restricted to educational podcasts, they indicate that **audio is well-suited to multitasking contexts** and that listeners habitually consume long stretches of spoken content, a pattern that learning designers can harness.

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## 4. Discussion

### 4.1 Synthesis of evidence

Across domains, several themes emerge:

1. **Podcasts are credible learning tools.** Reviews in higher and medical education consistently show that podcasts are feasible, popular with learners, and at least as effective as traditional modalities for supporting knowledge gains and (in some cases) behavioural change when used in a blended fashion (Cho et al., 2017; Kelly et al., 2022; Engzell et al., 2025; McLoughlin & Lee, 2007).
2. **Short, focused units support retention and completion.** Microlearning research indicates that brief, objective-aligned units (often 3–10 minutes) improve retention, performance, and satisfaction, particularly when integrated into the flow of work (Monib et al., 2024; Shail, 2019; Nikou & Economides, 2018; Rof et al., 2024).
3. **Conversational human narration enhances learning.** The personalization and voice principles show that conversational language and human voices support deeper cognitive processing and better learning outcomes than formal scripts or synthetic voices (Mayer, 2021; Rey, 2013).
4. **Native-language and localised training improves understanding.** Studies on safety and public communication demonstrate that tailoring training to workers' native or local languages and cultural contexts enhances comprehension, comfort, and perceived relevance (Evia, 2011; Arif et al., 2021; Dungcik et al., 2024).
5. **Audio fits naturally into everyday routines.** Podcast analytics show that adults already listen to hours of audio content each week, often while multitasking, and tend to complete a high proportion of the content they start (Neal Schaffer, 2025; Edison Research, as summarised by Descript, 2025).

Taken together, these strands suggest that **short, native-language, conversational audio episodes are well aligned with both cognitive principles and real-world listening behaviour**, particularly for adult learners with limited uninterrupted time.

### 4.2 Limitations of the current evidence

Several limitations temper these conclusions:

- Most empirical studies focus on **students in tertiary education or medical training**, not frontline workers in sectors such as retail or hospitality. Transferability is plausible but not guaranteed.
- Many studies use **self-reported outcomes** (e.g., perceived usefulness, self-assessed knowledge) rather than objective performance or business metrics.

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## 5. Conclusion

The literature reviewed here indicates that:

- Listening to podcasts can support effective learning, especially as part of a blended approach.
- Microlearning—particularly in short, targeted episodes—improves retention, engagement, and satisfaction when integrated into authentic practice.
- Conversational, human-voiced narration and native-language delivery further support comprehension, motivation, and a sense of connection.

For organisations seeking scalable ways to strengthen frontline staff knowledge, **podcast-based microlearning in employees' native languages** appears theoretically robust and practically promising. However, the field would benefit from continued **context-specific research in workplace and retail environments**.

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*(Additional practitioner sources cited in-text—e.g., Growth Engineering, Cohost, Loopex—can be added if you plan to include them formally in the reference list.)*

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