International Journal of Language and Literary Studies
Volume 7, Issue 4, 2025
Homepage : http://ijlls.org/index.php/ijlls

Shadowing for Developing EFL Learners' Bottom-up Listening Skills: A Systematic Review

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DOI: http://doi.org/ 10.36892/ijlls.v7i4.2260
APA Citation: El Moussaoui, M. (2025). Shadowing for Developing EFL Learners' Bottom-up Listening Skills: A Systematic Review. *International Journal of Language and Literary Studies. 7*(*4*).388-404. http://doi.org/10.36892/ijlls.v7i4.2260

Received: *17/06/2025*

Accepted: *20/07/2025*

Keywords: *shadowing, phoneme perception, word recognition, bottom-up skills, listening comprehension.*

Abstract

Shadowing is a technique that involves learners listening to spoken language and repeating it simultaneously. Recently, there has been growing interest in its potential for developing EFL learners' phoneme perception and word segmentation skills. This paper reviewed empirical studies published from the late 1990s up to 2023 to evaluate the effectiveness of shadowing in developing EFL learners' bottom-up listening skills. The findings indicate that shadowing supports beginners and lower-proficiency learners in perceiving sounds and recognizing words in connected speech. Three core themes emerged: (1) shadowing enhances phoneme perception and speeds up word recognition; (2) it is beneficial for learners who struggle with decoding spoken language; and (3) it promotes learner engagement and metacognitive awareness. The review also identified several factors influencing its effectiveness such as repetition frequency and difficulty of the listening materials. The findings suggest that shadowing is effective for improving EFL learners' bottom-up listening skills. However, research gaps remain regarding its relevance for advanced learners and long-term retention of bottom-up improvements.

1. INTRODUCTION

Comprehending spoken language involves both bottom-up and top-down processes. During bottom-up processing, listeners decipher sounds and combine them into words, phrases, and sentences to create meaning (Flowerdew & Miller, 2005). Many EFL learners, particularly those whose native language has a different phonological system from English, find the initial stage of decoding spoken language to be a significant challenge. Due to difficulties in perceiving English sounds and segmenting connected speech, they often struggle to catch words in fluent speech although they recognize them in their written form (Kadota, 2019; Hamada, 2017). For example, a frequent issue among Japanese learners involves distinguishing the English phonemes /r/ vs. /l/, /b/ vs. /v/ (Avery, Ehrlich, & Jull, 1992, as cited in Hamada, 2015). Similarly, because /p/ is absent in Arabic phonology, Arabic-speaking learners might confuse the English phonemes /p/ and /b/ which can interfere with word recognition and overall listening comprehension (Swan & Smith, 2001). These challenges place an excessive cognitive load on listeners' working memory, which forces them to rely on top-down strategies such as drawing on contextual cues or prior knowledge to interpret incoming speech (Field, 2008; Rost, 2011). Consequently, learners' bottom-up listening skills should be developed so they can accurately recognize and retain spoken language (Hamada, 2017; Kadota, 2019).

Shadowing has gained traction as a practical technique for enhancing EFL learners' bottom-up listening skills (Hamada, 2017; Kadota, 2019). According to several studies cited in Hamada (2017), shadowing originated in interpreter training and involves repeating heard speech with minimal lag between input and output (e.g., Lambert, 1988; Tamai, 1997). Lambert (1992) described it as "a paced, auditory tracking task which involves the immediate vocalization of auditorily presented stimuli, i.e, word-for-word repetition in the same language". Put simply, the learner listens to a spoken passage and simultaneously echoes the words out loud. Unlike simple repetition or listen-and-repeat drills where learners might hear a chunk of speech, pause, and then repeat it, shadowing is an online process that leaves virtually no time for translating or consciously analyzing meaning (Shiki, Mori, Kadota and Yoshida, 2010). Similarly, Tamai (1997) pointed out that shadowing is an active and cognitively demanding task that requires learners to simultaneously track and vocalize incoming speech as clearly and accurately as possible. Hamada (2015) argues that this real-time aspect of shadowing focuses the learner's attention on the sound stream itself rather than on interpreting meaning. In doing so, this technique improves learners' phonemic awareness and enhances the speed of their auditory processing. The theoretical rationale for using shadowing to develop bottom-up skills is supported by cognitive listening models. Kadota (2007, as cited in Hamada, 2017; 2019) explains shadowing in terms of working memory, particularly Baddeley's concept of the phonological loop, which is key to how we process and rehearse spoken language in real time. This model posits that heard speech is temporarily held in the phonological store and actively maintained through subvocal rehearsal (Kadota, 2019). When phoneme perception is not automatized, the phonological loop does not function smoothly and efficiently (Hamada, 2015; Kadota, 2019). By making learners repeat what they hear out loud, shadowing externalizes the subvocal rehearsal mechanism, which may strengthen the mapping of sounds to memory. By echoing incoming speech simultaneously and accurately, learners train their brain's sound processing capacity and reinforce phoneme discrimination in real time (Kadota, 2019). Kadota (2007, as cited in Kadota, 2019) suggested that shadowing promotes the automatic perception of incoming speech sounds before focusing on meaning and increases the speed of lexical rehearsal, promoting the internalization of words and formulaic phrases. In short, shadowing targets the perceptual stage of listening by training the ears to recognize sounds more accurately and quickly, which is expected to enhance comprehension once meaning is processed (Kadota, 2019; Hamada, 2015).

The effectiveness of shadowing in improving EFL listening skills has been increasingly investigated over the past twenty years. In Japan, early studies by Tamai (1997, 2005, as cited in Mori, 2011) reported that shadowing significantly improved learners' listening abilities. Similar findings were also observed in subsequent research (e.g., Mochizuki, 2006; Kato, 2009; Kuramoto et al., 2007, as cited in Hamada, 2015). These studies helped promote shadowing in Japanese EFL pedagogy as an effective tool for addressing bottom-up listening problems. Two commonly held notions emerged in the literature. The first is that shadowing enhances learners' phonemic perceptual ability (thus improving their bottom-up processing). The second suggests that it is especially effective for lower-proficiency learners who struggle with basic listening skills (Tamai, 2005, as cited in Hamada, 2015). However, the first claim lacked strong empirical support, and the second claim had not been thoroughly tested across different

proficiency levels (Hamada, 2018). This gap motivated further research to closely examine how shadowing supports listening, and which learners benefit the most from it.

Recent research has sought to measure the extent to which shadowing enhances bottom-up listening sub-skills. For instance, some studies evaluated improvements in phoneme perception before and after shadowing training using dictation and minimal pairs discrimination exercises (Hamada, 2015). In addition, researchers have examined how shadowing improves EFL learners' ability to recognize words in fast speech or comprehend spoken passages of varying difficulty (Hamada, 2018). Shadowing has also been compared with delayed repetition or silent reading with listening to find out which approach may be more effective for developing bottom-up skills (Shiki et al., 2010; Hamada, 2016). In the same vein, qualitative studies (e.g., Murphey, 2001) indicate that shadowing can improve learners' prosody and ability to process the natural rhythm and pace of English speech, offering additional support for bottom-up processing development (Hamada, 2018). However, shadowing is still met with skepticism and ongoing questions despite substantial research validating its effectiveness and increasing recognition of its benefits. The most popular criticism that has been raised about it is that it may be a mere audio-lingual mimicry exercise that does not genuinely contribute to listening comprehension (Kadota, 2019; Hamada, 2017). Indeed, shadowing has remained relatively underused and underresearched in Western educational contexts probably because it is perceived as a rote repetition exercise rooted in audio-lingual practices, which is inconsistent with principles of communicative language teaching (Murphey, 2001; Hamada, 2021). Nevertheless, Hamada (2017, 2021) contends that the view that shadowing is a meaningless speaking drill is misguided, stressing that it is fundamentally a listening-focused activity aimed at enhancing learners' bottom-up processing skills.

Shadowing can be used to develop students' aural processing if English teachers understand its pedagogical rationale and use appropriate implementation strategies. However, questions remain as to how to use shadowing effectively. For example, how many times should learners shadow a given passage? Should materials be easy and familiar, or is it more effective to challenge students with difficult input? And does combining shadowing with other activities enhance its effectiveness? In practice, there is no single standardized method for shadowing (Hamada, 2017). Educators have employed a wide range of shadowing varieties such as mumbling, parallel reading, interactive and phrase-level conversational shadowing, to name a few (Hamada, 2015; Murphey, 2001). While enriching, this diversity of methods makes it hard to compare outcomes across studies and contexts.

Considering the growing interest in shadowing and the wide range of instructional practices, a synthesis and analysis of current literature on this novel technique and its contribution to EFL listening development is warranted. To do so, this paper undertakes a systematic review of research on shadowing as a technique used for developing EFL learners' bottom-up listening skills. It provides empirical evidence for its effectiveness in improving phoneme perception, word segmentation, and other listening micro-skills (Kadota, 2019; Hamada, 2015). The review also examines whether shadowing proves more beneficial for lower-proficiency learners or those at higher proficiency levels (Hamada, 2015), while highlighting gaps in the current literature. By synthesizing findings from various studies, this review aims to help EFL teachers and researchers apply shadowing effectively.

2. METHODS

2.1. Search and inclusion criteria

This review adopted a systematic approach to identify relevant research on shadowing and EFL listening by searching multiple scholarly databases (e.g., ERIC, Scopus, Google Scholar, JSTOR) and academic journals for publications from 1997 (when shadowing began to be integrated into the EFL context, especially in Japan) through 2023. The keywords combinations used included *shadowing*, *EFL listening*, *bottom-up processing*, *phoneme perception*, *listening comprehension*, and *foreign language*. In addition to database searches, reference lists of key papers (such as Hamada, 2015 and Oki, 2010) were examined to locate earlier foundational studies and more recent studies that cited those works.

Studies were included based on the following criteria: **(1)** The participants were EFL learners of any age or proficiency level. Professional interpreters and ESL learners in immersive environments were excluded to maintain consistency of context. **(2)** The study implemented a *shadowing* technique as a central part of listening training or instruction. **(3)** Outcome measures included listening-related skills, with particular interest in bottom-up listening outcomes (e.g., tests of phoneme discrimination, word recognition, dictation, or overall listening comprehension tests). Both quantitative experimental studies (pre/post designs, comparisons with control groups) and qualitative or descriptive studies were considered, as long as they addressed development of listening skills through shadowing. We included studies published in peer-reviewed journals, dissertations, and conference proceedings; unpublished theses were considered if widely cited in the field. Non-English studies (e.g., Japanese-language articles) were included when an English summary or translation of key findings was available, given the significant body of shadowing research originating in Japan.

Studies focusing on *reading* shadowing (sometimes called "shadow-reading") without an audio component were excluded, since our focus was on listening-skill development. We also excluded purely theoretical papers that discussed shadowing but provided no empirical data, unless they offered theoretical frameworks that informed multiple empirical studies (e.g., Kadota's theoretical model).

2.2. Data extraction and analysis

Relevant data were collected from each study included in the review. This included information about participants and context of the study such as age, proficiency level, and L1 background. Information was also gathered on the shadowing method used, including the duration and frequency of training, whether the materials were easy or difficult, and whether any supplementary activities were included. We also examined the outcomes related to bottom-up listening, including improvements in phoneme perception, speed of word recognition, and performance on listening test scores. Where possible, effect sizes and statistical significance of improvements were noted. Finally, to provide a fuller picture of shadowing's impact, qualitative data such as learner feedback on shadowing or observed improvements in pronunciation or prosody were also recorded.

Given the variety of outcome measures, a meta-analysis was not feasible; instead, a descriptive and thematic analysis was conducted. We grouped findings into thematic categories reflecting different bottom-up skills (for example, "improvement in phoneme-level perception," "word segmentation and recognition," "listening comprehension scores") and noted patterns by

proficiency level of learners. We paid special attention to whether studies reported differential effects for lower versus higher proficiency participants. The results are organized narratively under these themes, with representative studies cited for each theme. Finally, we synthesized the overall effectiveness of shadowing and identified consensus, contradictions, and gaps in the literature, which are discussed in the Discussion section.

3. RESULTS

3.1. Overview of included studies

We reviewed a total of fifteen empirical studies that investigated the use of shadowing as a pedagogical technique for teaching EFL bottom-up listening skills. All these studies met the inclusion criteria outlined in the Methods section. While most studies were conducted in Japan, where shadowing research initially gained prominence, additional studies from Iran, Indonesia, and more recently Latin America reflect a growing global interest in the technique. Participants varied widely, comprising secondary school and university students as well as adult language learners, with proficiency levels ranging from absolute beginners (A1) to advanced. Table 1 summarizes the key characteristics and findings of the selected studies.

Table 1. Summary of Shadowing Studies

Study	Participants	Context	Design	Shadowing Procedure	Outcome Measures	Key Findings
Tamai (1997) (as cited in Hamada, 2018)	Japanese college EFL learners	Japan	Experimental: Shadowing vs. Control	5 days of 90-min lessons	Listening comprehension post-test	Shadowing group outperformed control; automatized lower-level processing
Murphey (2001)	Japanese university students	Japan	Qualitative classroom-based study	Conversational shadowing with partners (silent or aloud)	Self-reports, classroom observation	Improved rhythm, intonation, confidence; shy learners became more engaged
Takizawa (2002) (as cited in Ginting 2019	Japanese EFL learners (mixed levels)	Japan	Classroom study	Not fully detailed; classroom implementation	Listening efficiency, pronunciation, attention to input	Improved bottom-up processing, speech rate adaptation, concentration
Kadota & Tamai (2005)	Japanese learners, various levels	Japan	Pedagogical framework, not a single empirical study	Variants: mumbling, prosody shadowing, content shadowing	Conceptual synthesis from previous studies	Different shadowing forms reinforce sound-to-representation mapping; mumbling method prioritizes perception over production

Hamada (2011)	44 Japanese high school EFL students (lower-intermediate)	Japan	Classroom intervention study	8 sessions (25–30 min) with challenging texts	Listening comprehension test scores	Improvement shown despite difficult input; scaffolding helps learners adapt to authentic speech
Hamada (2012)	59 Japanese university EFL students	Japan	Comparison study: fixed vs. mixed difficulty materials	8 lessons with either varied or fixed text difficulty	Listening test performance	Both groups improved, but using easy and hard materials helped learners improve more and stay engaged
Hamada (2015)	43 Japanese university EFL students (split into low- and intermediate-proficiency groups)	Japan	Experimental study with pre-/post-tests	9 shadowing sessions using textbook passages; included mumbling, parallel reading, and content shadowing	Eiken listening tests; dictation cloze	Improved phoneme perception; listening gains only in low-proficiency learners
Hamada (2016)	44 Japanese university EFL learners	Japan	Experimental comparison: shadowing vs. repetition	8 lessons; ~20 mins each; textbook passages; standard shadowing steps (mumbling, parallel reading, content shadowing).	Eiken listening and reading pre-/post-tests	Shadowing improved listening; repetition improved reading.
Shiki et al. (2010)	48 Japanese university students	Japan	Within-subject comparison: shadowing vs. repeating	Six trials: shadowing and listen-and-repeat tasks	Reproduction rate, word type (content vs. function)	Shadowing yielded more content words; plateau after 4–5 trials; recommended 5 repetitions for effectiveness
Taki & Esmaeili (2017)	38 Iranian EFL learners (intermediate teens)	Iran	Experimental: shadowing vs. regular listening	Integrated into listening lessons, pre/post tests, and questionnaires	Listening test scores, metacognitive strategy use, and self-efficacy	Significant gains in listening and strategy use; non-significant rise in self-efficacy
Ginting (2019)	80 Indonesian university EFL learners	Indonesia	Quasi-experimental: shadowing vs. control	Shadowing lessons with pre/post activities and repetitions	Listening test scores, effect size, and mean score comparison	Significant improvement in listening; shadowing is effective for ESOL learners in EFL settings

Lestari (2020)	35 first-semester EFL students	Indonesia	Classroom action research (2 cycles)	Shadowing used over 2 cycles following Hamada's model: mumbling, parallel reading, content shadowing, dictation cloze	Listening test scores (fill-in-the-blank), observation, diary notes	Mean score improved from 58.4 to 79.5; students became more focused, active, and confident in listening tasks
Ekayati (2020)	60 Indonesian EFL learners (Grade 8)	Indonesia – Junior high school	Experimental: shadowing vs. three-phase method	Shadowing was used in 12 lessons; students repeated the audio while listening to recognize words..	Pre-/post-tests on listening word recognition	Shadowing group significantly outperformed control group; effect size 63.8% attributed to shadowing..
Zaidan (2021)	30 Palestinian 5th-grade girls (15 experimental, 15 control)	Palestine – Elementary school	Quasi-experimental: shadowing vs. traditional method	10 sessions using the the Kadota & Tamai model (mumbling, reading aloud, content shadowing); audio tasks + comprehension questions	Listening pre/post-tests; classroom observation	The experimental group showed significant improvement in comprehension, attention, confidence, and pronunciation; shadowing reduced anxiety and improved focus.
Campoverde & Argudo (2023)	60 Ecuadorian high school A1 learners	Ecuador	Experimental mixed-method; shadowing vs. regular curriculum	Shadowing used 2× per week for 6 weeks; pre/post Cambridge A2 Key listening test	Listening scores, learner perceptions	Improved phoneme/word recognition; positive learner views; suitable for beginner EFL learners

3.2.Impact of shadowing on bottom-up listening skills

1. Phoneme perception and auditory discrimination: It was consistently found across studies that shadowing can significantly improve learners' ability to perceive and distinguish English sounds. Because it requires learners to track spoken input attentively, shadowing develops their awareness of phonemes and allophonic details. Hamada (2015) provided direct empirical evidence for this: in his study, both lower-proficiency and intermediate Japanese EFL learners showed significant improvement on a phoneme perception test after nine sessions of shadowing training. In fact, phoneme perception (as measured by a dictation cloze test where students had to fill in missing words based on listening) improved regardless of the learners' initial proficiency (Hamada, 2015). This suggests that shadowing effectively trains learners' auditory perception. The theoretical explanation is that shadowing helps "automatize" phoneme processing, that is, learners get faster and more accurate at identifying sounds, which reduces the load on working memory (Hamada, 2014; Kadota, 2019). Several Japanese studies

concur that shadowing enhances the lower-level speech perception skills that precede comprehension (Kadota, 2019; Hamada, 2017). Kadota (2019) notes that unlike normal listening where attention might shift toward meaning, learners' attention during shadowing is directed almost exclusively to the incoming phonological information. This repeated and intense focus likely recalibrates learners' perceptual system to English sounds.

Learners often report that after engaging in shadowing practice, they start noticing sounds or words in English audio that they previously could not catch (for example, perceiving word boundaries or inflections more clearly). Takizawa (2002, as cited in Ginting, 2019) observed that students who regularly practiced shadowing became used to the natural pace of spoken English and could catch sounds at faster speeds. A typical example might involve a learner who initially hears "What are you doing?" as an unintelligible blur, but after shadowing practice begins to discern /wɒtə juː/, recognizing it as "what are you." This aligns with the idea that shadowing trains auditory decoding, enabling learners to convert the acoustic signal into recognizable linguistic units.

2. Word segmentation and recognition: Shadowing also aids in word segmentation, the ability to delineate individual words in the continuous speech stream. Many EFL learners struggle with connected speech phenomena like linking, elision, and weak forms, which makes it hard to tell where one word ends and the next begins. Through shadowing, learners implicitly practice parsing these connections, as they have to reproduce the stream with appropriate spacing (even if they are not aware of word boundaries, their brain attempts to chunk it in order to repeat it). Evidence from several studies points to improvements in word segmentation and recognition through shadowing. For instance, Shiki et al. (2010) found that during shadowing, learners reproduced salient content words even when they were unstressed or function words even when they were reduced. Additionally, Onaha (2004, as cited in Hamada, 2012) found that shadowing combined with dictation led to significant improvements in students' listening comprehension skills. Since dictation directly assesses learners' word segmentation skills, the improved performance of the shadowing-plus-dictation group indicates that shadowing contributed to enhancing learners' ability to segment and recognize words, which is clear evidence of improved bottom-up processing.

Hamada (2017) pointed out that shadowing improved learners' bottom-up skills, notably their sound recognition, which enabled them to recognize more words and thus free up attention for higher-level processing. In other words, as decoding becomes more automatic, learners don't have to strain to catch each word, so they can start focusing meaning. This cascade effect is essentially the goal of improving bottom-up skills: to make word recognition so quick and subconscious that the listener can attend to meaning. In practice, teachers have noticed that students who regularly practice shadowing begin to handle authentic listening texts with less confusion over unfamiliar accents or rapid speech. Ginting's (2019) experiment, for example, implicitly reflects word recognition gains: the shadowing group's superior listening scores likely resulted from improved word recognition during listening tasks, although this was not directly assessed.

3. Listening comprehension (bottom-up's contribution): Most studies measured overall listening comprehension through standardized exams or researcher-designed listening tests.

While these involve both bottom-up and top-down processing, significant improvements in test scores after shadowing training provide strong evidence that development of bottom-up skills leads to comprehension gains. A recurring finding across the literature is that lower-proficiency learners tend to benefit more in terms of comprehension improvement. Hamada (2015) found that only the low-proficiency group showed statistically significant improvement on a listening comprehension test featuring relatively easy, high-school level passages after shadowing training. The advanced group did not show similar improvement on that test. Hamada concluded that shadowing was effective for basic listening comprehension skills for low-level learners, but not sufficient to boost advanced listening skills for higher-level learners. This conclusion aligns with Tamai (2005, as cited in Saito et al., 2010; Hamada, 2017) who observed that shadowing significantly improved listening skills for low- and intermediate-proficiency learners, but not for high-proficiency students.

Lower-proficiency learners often struggle with decoding due to underdeveloped bottom-up listening skills. This accounts for their greater gains from training focused on phoneme perception and word recognition. Shadowing supports them by developing their ability to process speech at or slightly above their level. For example, in a study involving A1-level Ecuadorian high school students, Campoverde and Argudo (2023) implemented shadowing with A2-level listening tests. The results showed that shadowing helped learners perceive individual sounds and recognize word boundaries, skills that are crucial for beginners with limited exposure to English outside the classroom. In the same vein, Ginting (2019) found that Indonesian university freshmen who received shadowing practice did better than the control group on IELTS-based listening tasks, suggesting that reinforcement of bottom-up decoding can be beneficial for learners beyond the beginner stage. Nevertheless, Hamada (2017) notes that shadowing offers limited benefits for advanced learners, particularly when their comprehension is already supported by efficient bottom-up processing. These learners might struggle with higher-level skills such as making inferences or interpreting nuanced meaning. While shadowing can help with prosody, pronunciation, and processing fluency, the measurable benefits in comprehension tend to diminish as learners' decoding becomes more automatic. Thus, shadowing is most effective when learners' listening difficulties stem from sound-level processing. Once that barrier is removed, further gains in comprehension may require a different instructional focus.

4. Prosody and fluency of processing: Several studies note improvements in prosodic aspects of listening and speaking. Shadowing requires paying attention not just to individual sounds, but also to intonation, stress, and rhythm to accurately mimic the speaker. As a result, learners often develop better prosodic perception and become more sensitive to stress timing, tone, and pauses. Takizawa (2002, as cited in Hamada, 2012) reported that students improved their pronunciation through shadowing and got used to the natural speed of English. Improved pronunciation indicates that they have internalized the correct sounds and stress patterns during listening. Likewise, Murphey (2001, as cited in Kadota, 2019) found that learners gained a better sense of English intonation by shadowing conversationally. Additionally, shadowing seems to improve processing fluency. Learners often report that repeated shadowing practice helps them keep up more easily with spoken English. Hamada (2017) notes that when EFL learners improve their phoneme perception through shadowing, they reduce the cognitive load on working memory, which allows more resources to be devoted to comprehension. This shift

facilitates smoother processing of spoken input. In the same vein, Kadota (2019) argues that as shadowing becomes more automatic, learners can allocate their attention more efficiently from decoding to understanding, resulting in increased fluency. These improvements help learners cope with fast speech and reduce anxiety during real-time listening situations.

3.3.Factors influencing shadowing effectiveness

The review also identified several factors that can influence the effectiveness of shadowing for developing bottom-up listening skills. A key factor is the number of times learners repeat the same passage. Studies suggest that the benefits plateau after a certain number of repetitions, although it can be effective in the early stages of training. In this regard, Shiki et al. (2010) found that learners' ability to reproduce the audio input accurately improved significantly up to the fourth or fifth trial, after which progress leveled off. Based on these findings, subsequent research suggested that excessive repetition can lead to fatigue or reduced engagement, and limited repetitions to around five (Goto, 2023). In the same vein, Hamada (2011) noted that repeating passages five times is effective without being exhaustive. Another important variable is whether learners should shadow easy, level-appropriate, or challenging texts. Research findings indicate that a balanced approach can be beneficial. However, using slightly challenging materials can encourage learners to adapt to faster speech and unfamiliar vocabulary. For example, Hamada (2011) used a rather challenging high school textbook and still observed measurable gains in listening skills. Similarly, Hamada (2017) found that mixing difficult and easier texts improved university students' listening comprehension without overwhelming them. In a similar vein, Goto (2023) highlighted that difficult materials, when combined with level-appropriate ones, can help maintain learner progress while avoiding cognitive overload. However, if the material is too difficult, beginners might become demotivated or fail to shadow at all. A few studies have recommended beginning with easier, scripted dialogues and gradually moving to more natural speech. For example, Mochizuki (2006, as cited in Hamada, 2012) and Hamada (2021) suggested that starting with simplified materials helps build learner confidence, while advocating stepwise progress toward authentic spoken input. The key is to use audio that is comprehensible but contains some faster speech or reduced forms to challenge and improve leaners' auditory perception. Another factor affecting the effectiveness of shadowing is whether it is combined with other activities. Some researchers argue that shadowing can yield better results when it is incorporated as part of a series of listening activities. Pre-shadowing tasks like vocabulary check or content prediction, and post-shadowing activities such as summarizing or answering comprehension questions, can help connect bottom-up practice to top-down understanding. Hamada (2014) found that the group that received post-listening activities benefited more than with shadowing alone. Shiki et al. (2010) observed that repeating shadowing four or five times was sufficient since performance did not improve further with more practice, indicating a possible ceiling effect; thus, improvement can be sustained by alternating shadowing with other listening activities such as silent listening and answering comprehension questions as proposed by Hamada (2012). Hamada (2017) further noted that when shadowing is integrated into a sequence of tasks, it enables learners to connect bottom-up decoding with top-down comprehension, making listening instruction more effective. Learner training and attitudes are also decisive factors. Because shadowing is cognitively demanding, several studies have underscored the need to explicitly train learners on how to perform it effectively and explain its pedagogical

value. If not properly oriented, students may find the activity stressful or think they are 'not good at it,' especially when required to speak along with audio input. Murphey (2001) indicated that playfully introducing shadowing through activities such as mimicking songs or simple dialogues can lower learners' affective filter and boost engagement. As noted by Hamada (2018), even those students who are used to repetitive drills lose motivation if they do not understand the purpose of shadowing or perceive it as a taxing exercise. One major problem lies in the tendency of learners to translate while shadowing, especially if they are instructed to focus on meaning; this interferes with the main purpose of shadowing which is to attend to phonological features (Hamada, 2011; Goto, 2023). To resolve this issue, instructors should make it clear to learners that understanding the content is not necessary during shadowing and that comprehension can be checked later. This understanding reduces performance anxiety and improves learning outcomes (Hamada, 2018). Indeed, where studies elicited learner feedback, it was found that most participants appreciated shadowing once they started observing its effects on their listening skills (Goto, 2023). For example, Taki and Esmaeili (2017) found that learners who were trained in shadowing used more metacognitive listening strategies, which indicated a shift toward more engaged listening behaviors.

In sum, these studies strongly prove that shadowing can significantly improve listening skills among EFL learners by enhancing their ability to decode sound streams, segment words accurately and segmentation and process speech more fluently. These improvements often translate into better listening comprehension, particularly among less proficient learners who still have "room for growth" in their decoding abilities. Across different proficiency levels, the main universal benefit of shadowing is improving phonological perception, which is a prerequisite for any further listening development.

4. DISCUSSION

This systematic review examined how shadowing can develop EFL learners' bottom-up listening skills and found it to be an effective technique. Shadowing is an activity that involves instant repetition of what is heard and, therefore, requires close attention to language forms (sounds, words, and intonation). Evidence from the studies presented above clearly indicates improvements in learners' ability to process spoken input. This supports theoretical claims cited by Hamada (2012) and Kadota (2019) that shadowing sharpens auditory perception and automatizes speech processing. After shadowing, EFL learners become more efficient at quickly and accurately recognizing familiar words, as well as processing fast speech and unfamiliar words (Hamada, 2016; Campoverde & Argudo, 2023). Such improvements help alleviate what is known as the bottom-up bottleneck, which refers to difficulties in decoding speech signals that impede overall comprehension. As noted by Hamada (2012), earlier works by Tamai (1992) and Kadota (2007) argued that strengthening bottom-up processing through shadowing enhances listeners' ability to interpret meaning effectively.

Three key themes emerged from the literature.

1. Shadowing improves phonological perception and word recognition. Multiple studies found that shadowing enhances learners' ability to distinguish phonemes and recognize words in fluent speech. Hamada (2015), for example, found that both low- and intermediate-proficiency learners significantly improved on cloze dictation and listening comprehension tests after structured shadowing sessions. The improvement was due to

better processing of reduced forms, assimilation, and fast-paced authentic audio. Shiki et al. (2010) also found that learners reproduced more content words after shadowing, suggesting improved lexical segmentation, while Takizawa (2002, as cited in Ginting, 2019) noted improvement in learners' ability to follow the rhythm and natural speed of connected speech, enabling them to better keep pace with fluent, real-time input. Improvements in the perception of phonological cues often led to higher listening comprehension scores, particularly among the lower-level learners. This finding supports the view that beginners and intermediate learners do not mainly lack vocabulary or grammar knowledge when they have listening comprehension difficulties; rather, it is their inability to accurately perceive what has been said. Since shadowing addresses this perceptual gap, it indirectly boosts comprehension. Therefore, EFL teachers can utilize shadowing to help learners overcome initial difficulties in accurately perceiving spoken input. For example, once a learner hears and perceives the sentence "He's gonna leave soon" accurately, instead of just some vague unorganized stream of sounds, they can match it to what they already know, making comprehension easier. If they cannot decode such input, they may fail to recognize expressions they already know, such as "going to leave." In this way, shadowing provides learners with the sound foundation necessary to comprehend more complex input.

2. Shadowing is most effective for lower-proficiency learners. A consistently recurring theme across available literature is that beginners and low-intermediate learners usually have problems with the perception of spoken language rather than comprehension. This can be effectively addressed by shadowing because it trains them to recognize and process speech sounds and words in real time, thereby enhancing both their auditory perception and cognitive decoding abilities. A study conducted by Hamada (2015) found that low-proficiency learners made significant improvement in listening comprehension through shadowing, while higher-proficiency learners did not benefit as much, probably due to their already well-developed bottom-up processing skills. Findings by Campoverde and Argudo (2023) also revealed that A1-level Ecuadorian university students showed marked improvement in their A2 Key test scores after shadowing practice. According to Ginting (2019), Indonesian EFL learners made notable progress in listening assessments after undertaking several shadowing sessions. These findings confirm that shadowing is most effective for learners whose foundational decoding skills are still developing. Once these processing becomes automatized, its benefits tend to diminish. This is often the case for advanced learners, who already possess automatized decoding skills and therefore no longer need further improvement through bottom-up training. Hamada (2015) describes this as a potential ceiling effect, whereby further shadowing does not significantly enhance performance on listening tasks. Instead, advanced students should be given tasks that may challenge their interpretive and inferencing abilities. For example, strategy-based instruction which emphasizes content prediction, summarizing of information, or the application of contextual knowledge may work better. Tasks that use authentic listening materials such as unscripted dialogues, lectures, or debates may help them engage with complex, real-world input. Hamada (2017) also recommended tapering off shadowing for higher-level learners and combining it with top-down strategies to maintain engagement and progress. For such learners, shadowing may be better used only for fine-tuning

intonation or maintaining fluency, as its impact on comprehension becomes relatively limited.

3. Shadowing increases learner engagement and metacognitive awareness: A consistent finding is that shadowing enhances not only listening performance but also reshapes learners' cognitive and affective engagement with listening tasks. Unlike traditional passive listening, shadowing requires active participation, immediate processing, and clear task orientation. This promotes stronger engagement, as learners must sustain heightened focus and purpose to keep pace with the speaker. Taki and Esmaeili (2017) found that shadowing significantly enhanced Iranian EFL learners' use of metacognitive listening strategies such as planning, self-monitoring, and evaluating. The findings indicated that they became more aware of their processing habits by identifying which segments caused difficulty and why, and they reported more confidence in handling unfamiliar input. In addition, Murphey (2001) observed that when shadowing exercises were introduced in a playful or collaborative manner, they helped lower learners' affective filter and boost motivation and participation. Over time, the ability to shadow increasingly complex speech helped sustain motivation and strengthen their confidence in their listening abilities. Hamada (2018) and Goto (2023) emphasized the importance of clear guidance and gradual scaffolding for successful shadowing. Once students realize that perfection is not a prerequisite and understanding is not the main goal of the exercise, their anxiety tends to diminish. Hamada (2018) observed that students who were informed about the pedagogical significance of shadowing demonstrated greater and reported higher satisfaction, particularly after practicing shadowing several times.

   The motivational effect of shadowing is further enhanced when it is seen by the learners not as mere mimicry but strategic rehearsal for real-world listening. As learners repeatedly hear and try to reproduce authentic speech, they gradually become more aware of certain reduced forms and pronunciation patterns (Kadota 2019). This awareness helps them fine-tune their listening strategies and make informed choices in real-time comprehension tasks. Thus, the evidence indicates a dual role for shadowing: while it improves basic decoding skills, it also develops self-regulated reflective listeners who are more engaged and aware of their own listening processes.

4.1. Research Gaps and Future Directions

Despite strong empirical support for shadowing, this review also uncovered several important gaps and directions for future research:

- Long-term retention and skill transfer: Many studies showed that shadowing leads to noticeable improvements in bottom-up listening skills by the end of the training period. However, do learners continue to recognize sounds and words accurately after training ends, or do they need to keep practicing shadowing to maintain their skills? Longitudinal studies are needed to find out whether occasional shadowing (for maintenance) is enough to preserve these gains, or if the improvements fade over time. Another unanswered question is whether the skills learned through shadowing carry over to new situations. For example, if learners practice shadowing with news broadcasts, does it help them understand everyday conversations and

different accents and speaking styles? Research is also required to measure the extent to which shadowing can be helpful in these and other real-life listening situations.

- Upper proficiency levels and ceiling effects: as discussed above, there is limited evidence of significant benefits for advanced learners in terms of comprehension scores. Is this because of a true ceiling (they already perceive almost all sounds correctly), or because of the way we measure listening? Perhaps advanced listening involves more complex inferencing where bottom-up is necessary but not sufficient. It would be useful to design studies specifically with higher-proficiency EFL learners to see if any particular bottom-up aspects still trouble them (e.g., maybe understanding heavily accented speech or very fast speech), and then test if shadowing those types of inputs can push their ability further. If advanced students are to benefit, the training might need to involve very challenging materials (e.g., shadowing unscripted podcasts, different English accents, etc.). This is relatively uncharted territory as most shadowing research has focused on beginners to intermediate-level learners.

- Standardizing shadowing methodology: as indicated in the reviewed studies, there is significant variation in how shadowing is implemented across contexts, which makes comparisons of findings challenging. Shadowing training may differ from one study to another in terms of duration, frequency, task design, or support activities. Therefore, establishing optimal and replicable protocols should be the focus of future research. Key questions remain: what is the ideal length of audio to shadow for learners at a specific level to maximize focus without overloading memory? How many hours or sessions of practice are needed to see noticeable improvements? While classroom routines based on experimental evidence were proposed by Hamada (2012, 2016) and Kadota (2019), there is still a lack of consensus on standardized duration, frequency, and intensity of shadowing instruction.

Recent works, such as Hamada (2021), have attempted to provide practical guides to teachers with formats easily adapted to the needs of learners. Still, a clearer and more consistent framework would make it easier for teachers to implement shadowing with greater confidence. The outcomes of shadowing may also vary depending how complex the tasks can be, learner motivation and familiarity with the material (Goto, 2023; Hamada, 2011).

Additionally, research could further explore how technology might help with independent shadowing practice. While works like Hamada (2014) stress the need to lower learners' cognitive load and foster self-regulated listening with structured routines like post-shadowing, there is a lack of research on how digital tools could help with this outside the classroom. Future work could examine the potential of learner-controlled technologies such as audio-recording apps or speed-adjustable playback software to help students practice independently. Though not yet standardized, such tools may help make shadowing more accessible and engaging in self-study contexts, especially where learner motivation and autonomy are essential.

- Integrating top-down and bottom-up training. The gap lies not in whether shadowing is effective, since substantial evidence supports its role in enhancing bottom-up listening skills, but in how it fits into the bigger picture of listening pedagogy. A key pedagogical question is how teachers can help learners move from simply decoding sounds to using that ability to understand meaning through strategies like predicting or inferring. Some learners, after

practicing shadowing for some time, might need guidance to use their improved decoding ability to better exploit context and meaning, so they do not become overly focused on word-by-word processing. Future experimental research could explore the effectiveness of combining shadowing with explicit strategy instruction (e.g., inferencing, predicting). Such comparisons will reveal whether the combination yields more substantial improvements in listening comprehension.

Limitations of the current review

It should be noted that while this review tried to be comprehensive, most available studies on shadowing originate from certain contexts, notably Japan, which may limit generalizability. However, the inclusion of studies from other countries, such as Iran and Indonesia, suggests that the observed effects may not be limited to one cultural or educational setting. Another limitation is the wide variety of assessment methods used across the included studies which prevented us from conducting a meta-analysis. There is also the possibility of publication bias, whereby studies reporting positive findings are more likely to be published, while those reporting less favorable outcomes may be left out. Nevertheless, the consistency of outcomes across many independent studies gives more confidence in the overall findings.

5. CONCLUSION

This systematic review of the literature shows a strong consensus among researchers that shadowing is effective in developing EFL learners' bottom-up listening skills by enhancing their ability to decode sounds and recognize words in real-time listening. These skills are essential for learners to make sense of spoken input and form the foundation for broader listening competence from the bottom up (Hamada, 2019). In addition to this role, shadowing can promote the development of metacognitive awareness, helping learners monitor and reflect on their listening process. The findings indicate that it benefits beginner and intermediate learners who need support decoding spoken language. Even a very short shadowing exercise in each class can lead to noticeable improvements in listening accuracy and learner confidence. However, teachers are encouraged to implement it with explicit guidance and combine it with meaning-focused activities, so that learners can relate improved decoding abilities to better comprehension (Kadota & Tamai, 2004; Hamada, 2014). Future research should then explore how shadowing can be integrated with top-down strategy instruction such as predicting, inferencing, and drawing on context so that learners not only decode more effectively but also better interpret meaning. When incorporated into a balanced and well-structured listening curriculum, shadowing can help EFL learners successfully deal with the challenges of real-world spoken English.

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