

Expanding English Learning Beyond Classroom Boundaries: Investigating EFL Students' Perceptions of the Effects of Listening to Online Stories on Incidental Vocabulary Acquisition

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Abstract—This study investigated EFL students' perceptions of how listening to online stories impacts incidental vocabulary acquisition. Conducted at an English department at a public university in Riyadh, Saudi Arabia, the research examined cognitive processes and assessment methods related to vocabulary learning, including dynamic and self-assessment. Quantitative results showed that listening to online stories significantly improved incidental vocabulary acquisition, with a mean score of 3.59 ± 0.84 . About 89.8% of students reported enhanced vocabulary, covering aspects such as word recognition, formation, and usage, while 84.2% observed better word recognition in different contexts. Additionally, 80% of students found that online stories were more effective than reading for increasing vocabulary knowledge. Self-assessment also played a significant role in understanding vocabulary acquisition processes, with a mean score of 3.70 ± 0.90 . Qualitative results identified six key methods for assessing vocabulary acquisition: dynamic assessment, technology-based tools, vocabulary tests, self-assessment, vocabulary journals, and storytelling assignments. Vocabulary journals were identified for their effectiveness in developing cognitive skills, functional vocabulary use, and contextual understanding, and reinforcing retention through repetition. The study underscores the benefits of online stories for authentic vocabulary learning and suggests incorporating modern methods, such as mobile applications, to extend English learning beyond the classroom.

Index Terms—English as a Foreign Language, incidental vocabulary acquisition, listening to online stories, self-assessment

I. INTRODUCTION

Mastering English as a Foreign Language (EFL) relies primarily on vocabulary acquisition, which is crucial for proficiency in reading, speaking, and writing, and for effective communication. Researchers agree on the importance of vocabulary development but differ on the best learning methods (Knaak et al., 2021). In this regard, Karami and Bowles (2019) indicate that intentional vocabulary learning involves direct instruction, such as using word lists, flashcards, morphological analysis, and semantic mapping, which helps with acquiring low-frequency words and improves specific vocabulary contexts. Incidental vocabulary learning, on the other hand, occurs through exposure to vocabulary in various materials and contexts, leading to a more spontaneous acquisition. Direct instruction significantly benefits intentional vocabulary acquisition, while incidental learning, through repeated exposure, can foster substantial vocabulary development (Black & Wright, 2023). In the same line, Dang et al. (2022) contended that while direct instruction can be beneficial for single-word acquisition at the level of meaning recall, they primarily do not lead to notable improvements in vocabulary acquisition. Vocabulary acquisition involves more than just knowing many words; learners must be able to access this knowledge frequently and use it effectively when engaging in diverse spoken, reading, or written tasks (Chang & Wu, 2019; Feng & Webb, 2020; Jiang & Grabe, 2020; Lee & Jang, 2021; Sun et al., 2023; Stoffelsma et al., 2024). In this respect, Ellis (1997) states that in L2 language acquisition, it is important to consider more than just the strategies for effective learning and retrieval (pp. 15-25). Methods such as word substitution and crossword puzzles may be less effective for language learning, often promoting rote memorization rather than meaningful engagement and leading to limited cognitive development. In contrast, incidental vocabulary acquisition, which occurs naturally through activities like reading or listening, tends to be more effective as it allows learners to encounter and assimilate new words in context (Webb et al., 2020). This learning occurs as learners gradually understand each new word through its use in different contexts. In this regard, Krashen (1982) argues that incidental learning is more efficient, as it integrates new vocabulary into learners' knowledge, developing their vocabulary competence. Similarly, Arndt and Woore (2018), Majuddin et al. (2021), Teng (2022), and Webb and Rodgers (2020) have shown that incidental acquisition occurs when learners interact with content outside the classroom, such as watching TV, listening to the radio, viewing captioned videos, or watching YouTube. Engaging with various audio-visual materials can significantly boost incidental vocabulary learning (Ramezanali & Faez, 2019; Ramezanali et al., 2020; Teng, 2022). Furthermore, previous research (Abdollahpour &

Maleki, 2023; Kwak, 2020; Nie et al., 2022; Smith, 2022; Teng & Mizumoto, 2023) has found that listening to stories substantially affects vocabulary acquisition. These studies also indicate that technology offers various tools to aid vocabulary learning beyond the classroom. Tools such as podcasts, mobile applications, websites, and other AI-based technologies are effectively used to enhance incidental vocabulary acquisition.

Therefore, the current study aimed to investigate EFL students' perceptions of how listening to online stories affects incidental vocabulary acquisition, focusing on three key areas: word recognition, meaning connection, and usage.

The goal is to understand the complex relationship between vocabulary knowledge and overall language proficiency. Many undergraduate students in the English department at the public university, Riyadh, Saudi Arabia, believe that direct vocabulary instruction is insufficient for their vocabulary development, noting that their reading materials emphasize comprehension and memorization rather than providing opportunities for authentic vocabulary use. Consequently, their vocabulary development often relies heavily on exposure to written and spoken language in academic settings. Despite previous research on vocabulary acquisition, there is limited investigation into incidental vocabulary learning through listening (Stoffelsma et al., 2024), particularly through listening to online stories. This study seeks to address this gap by examining both the immediate and long-term effects of such learning and exploring students' awareness of the cognitive processes involved and the role of self-assessment in improving vocabulary acquisition.

II. LITERATURE REVIEW

A. Theoretical Framework: Cognitive Processes in Vocabulary Acquisition

Vocabulary acquisition draws from various theoretical perspectives. Extensive research links vocabulary learning with theories such as social constructivism, schema theory, psycholinguistic theories, dual-coding theory, and motivation theory (Black & Wright, 2023). For example, schema and psycholinguistic theories (Anderson, 1980; Bartlett, 1969; Chomsky, 1960; Rumelhart, 1970, 2011; cited in Black & Wright, 2023) propose that language is mentally processed and that learners use predictions to derive meaning while reading. In this respect, Black and Wright (2023) noted that learners use background knowledge, and conceptual skills, to process, encode, organize, and retrieve information. Consequently, psycholinguistic and schema theories emphasize the importance of analyzing morphological features, linking new words to synonyms and antonyms, and creating concept maps and organizers (Black & Wright, 2023). In this regard, Wright et al. (2016) argue that schema and psycholinguistic theories in vocabulary development rely on structured strategies where teachers intentionally activate prior knowledge to connect new learning to existing concepts, thereby emphasizing the expansion of learners' vocabulary. From another perspective, social constructivism (Bruner, 1966; Vygotsky, 1986; cited in Schunk, 2019; McVe et al., 2005) posits that language development is constructed socially through interaction. In this respect, Quoc and Van (2023) found that using a constructivist approach in language education helps EFL learners enhance vocabulary retention, particularly in meaning recall during reading comprehension. A different view was proposed in Krashen's (1982) acquisition-learning hypothesis, which differentiates between *acquisition*, which is a subconscious process, and *learning*, which is a conscious process involving formal instruction (pp. 20-29). Krashen (1982) argues that acquisition is far more effective for gaining language proficiency. Cognitive theories also emphasize the importance of metacognition, where learners become aware of their own learning processes and strategies. This awareness enables them to consciously apply techniques such as mnemonic devices or contextual clues to better acquire and retain vocabulary. For example, the Dual Coding Theory (DCT) suggests that language development occurs when verbal and nonverbal codes are connected (Thomas & Lenox, 2014; cited in Black & Wright, 2023). According to DCT, the verbal code is responsible for processing and representing language, while the nonverbal code represents abstract ideas in a concrete form. Therefore, in vocabulary acquisition, strategies should emphasize concreteness, imagery, and sensory experiences. As Wright et al. (2016) put it, these strategies are a "brain-based multisensory approach to deeply embedding vocabulary in the individual learner's mind and memory" (p. 1275). On the other hand, motivation theory proposes that vocabulary acquisition is enhanced when learners engage with reading/listening materials aligned with their goals and desires (Wright & Cervetti, 2017). In this regard, Gu (2020) asserts that individual factors like motivation, and learning styles impact the choice and effectiveness of vocabulary learning strategies. Thus, vocabulary strategies vary in their usefulness among English learners, and students need to understand the cognitive processes that aid in vocabulary development. Based on these theories, vocabulary acquisition involves complex cognitive processes that help learners understand, store, and retrieve words in a second language. In this regard, Moody et al. (2018), and Wright et al. (2016) highlight several key processes: comprehension for understanding new words, semantic mapping to link new words with known concepts, and memory encoding to connect new vocabulary with existing knowledge. Effective storage requires repeated exposure and practice, using tools like flashcards and word lists, while retrieval involves recalling and recognizing vocabulary through regular practice in various contexts. Cognitive strategies, such as mnemonic devices and imagery, enhance vocabulary retention and retrieval, leading to improved communication skills and language proficiency. In this respect, Gilber et al. (2021) indicate that the ability to quickly and accurately access word meanings is crucial for language comprehension. Findings from Gilber et al. (2021) show that experience with word usage impacts the understanding of ambiguous words, and that lexical-semantic learning is tied to cognitive processes aiding comprehension within sentence contexts. Lexical access involves activating semantic networks and phonological forms, influenced by word frequency, familiarity, and context. Learners build meaning through semantic elaboration by relating new vocabulary to contextual cues from reading or listening. Additionally, understanding syntax and morphology helps in

deciphering word meanings and grammatical functions. Thus, Gilber et al. (2021) suggest that strong syntactic and morphological awareness enables learners to infer word meanings from structural clues, enhancing comprehension and vocabulary acquisition.

B. Incidental and Intentional Vocabulary Acquisition

Webb and Rodgers (2020) define incidental vocabulary acquisition as spontaneous learning that happens without deliberate effort, occurring through activities like reading, watching movies, or conversing with native speakers. In contrast, intentional vocabulary acquisition involves explicit efforts to learn new words through methods like rote memorization, mnemonic devices, or structured exercises. Pedagogically, the goal of vocabulary activity often outweighs the learner's intention. A study by Webb et al. (2020) showed that intentional learning benefits from word-focused activities like flashcards, and word lists, but it also requires attention to learning direction. Applying meta-regression analyses, the results revealed that intentional vocabulary learning does not merely occur through word-focused tasks, but it must be accompanied by placing emphasis on direction of learning. In a different study, Black and Wright (2023) found that intentional vocabulary acquisition can be enhanced by extensive reading and effective vocabulary instruction, which includes providing definitional and contextual information. In contrast, De Vos et al. (2018) indicated that incidental learning is effective when learners are exposed to words multiple times in various contexts. This exposure allows for gradual acquisition through implicit learning processes. Controversy, Dang et al. (2022) argued that while intentional learning in academic settings can improve vocabulary acquisition, it primarily enhances single word recall and recognition of collocations rather than their usage. Increased frequency of single words in academic lectures boosts their learning, but this effect does not extend to collocations. Duong et al. (2021) explored how input repetition, and individual differences (like prior vocabulary knowledge and working memory) affect L2 learners' incidental lexical mining during immediate and repeated oral tasks. Results showed that learners could extract single words and formulaic sequences in both tasks. However, while the number of shared words stayed the same in repeated tasks, the number of shared formulaic sequences decreased. Input repetition did not influence lexical mining, and only prior vocabulary knowledge was positively associated with successful lexical extraction. In a different study, Teng (2020) investigated how different reading conditions, including reading alone versus reading with first language (L1) marginal glosses, impact the retention of new words. The study found that groups using L1 marginal glosses scored significantly higher than those in the reading-only condition. The study highlights the advantages of repeated word exposure and L1 marginal glosses for improving vocabulary retention. Previous studies (Gallagher et al., 2019; Jin & Webb, 2020; Karami & Bowles, 2019; Teng & Mizumoto, 2023) revealed that intentional and incidental vocabulary acquisition are two distinct but essential methods for learning new words. Intentional vocabulary acquisition involves deliberate efforts, such as explicit instruction, memorization, and practice. Incidental acquisition happens when learners are engaged in activities outside the classroom, watching television, or listening to radio, or watching YouTube (Arndt & Woore, 2018; Stoffelsma et al., 2024; Teng, 2022; Webb & Rodgers, 2020). In this respect, Majuddin et al. (2021) indicated that incidental acquisition of multiword expressions through audiovisual materials is improved by using repetition and typographic techniques to highlight specific words within the surrounding text. In the same light, Laufer and Vaisman (2023) revealed that learning a second language vocabulary outside the classroom can be boosted by engaging in digital activities. These activities often provide a more genuine and contextual grasp of words, as learners encounter vocabulary in relevant and meaningful situations.

C. Learning Vocabulary From Reading Stories vs. Listening to Stories

Learning vocabulary from reading and listening to stories involves different cognitive processes. Reading allows learners to reflect on unfamiliar words, use context clues, and consult dictionaries, which helps in reinforcing word recognition through visual processing. Pilongo et al. (2023) argued that reading comprehension is closely linked to vocabulary acquisition, suggesting that reading ability depends heavily on vocabulary mastery. It also found that regular vocabulary review exercises in reading comprehension improve students' ability to remember and retain vocabulary over time. In this respect, Rasinski et al. (2017) concluded that expanding vocabulary through reading enhances students' metalinguistic awareness, including phonological, morphological, and syntactical skills. Supporting these findings, Moody et al. (2018) found that insufficient L2 vocabulary can hinder the development of basic reading skills and reading comprehension. Substantial research explored various effective methods for improving vocabulary retention, such as lectures (Dang et al., 2022), taking tests (Kasahara & Kanayama, 2021), or using input repetition (Duong et al., 2021). Additionally, technological advancements aid learners to boost vocabulary size, using mobile-assisted language learning, MALL (Nguyen & Le, 2023), and computer-assisted language learning, CALL (Nguyen et al., 2022). Furthermore, while reading stories supports visual learning and detailed vocabulary analysis, listening to stories enhances auditory learning and helps learners internalize language sounds and patterns. Listening improves auditory processing, exposes learners to natural pronunciation and intonation, and provides an immersive experience that highlights subtle nuances and contextual cues. It also aids in developing listening comprehension skills and understanding spoken language in real-time.

Research has explored how storytelling can effectively enhance vocabulary acquisition among EFL students. For example, according to Kwak (2020), storytelling engages students, providing contextualized learning experiences that reinforce vocabulary retention. These findings align with earlier findings by Chang and Wu (2019), indicating that listening to stories creates an immersive learning environment, improving vocabulary comprehension and usage. Similarly, Lee and Jang (2021) found that narrative-based activities stimulate cognitive processes essential for vocabulary

development, such as inferencing and semantic mapping. Zeng and Goh (2018) asserted that listening comprehension involves complex cognitive skills and metacognitive awareness. It enables learners to recognize essential information, interpret nuances, deduce context from spoken signals, and develop overall communicative and intercultural competence. In other words, building vocabulary through listening to stories helps learners develop incidental vocabulary acquisition. Additionally, modern technology supports vocabulary acquisition by enabling interactions with stories through mobile applications and online platforms (Nguyen & Le, 2023). Conversely, some studies suggest that learner proficiency and narrative complexity can impact the effectiveness of story-based learning for vocabulary acquisition. For instance, Jiang and Grabe (2020) recommended tailoring storytelling techniques to meet learners' different levels and preferences for optimal results. From another perspective, previous research (Chen, 2021; Malone, 2018; Teng, 2016; Vu & Peters, 2022) supports the reading-while-listening (RWL) approach, indicating that it is more effective for vocabulary learning than reading only (RO). However, there is a gap in the literature regarding the impacts of listening to online stories on EFL students' incidental vocabulary acquisition, and further studies are needed to examine its immediate and long-term effects on language proficiency.

D. Assessment of Vocabulary Acquisition

Assessing vocabulary acquisition involves various methods to evaluate how effectively learners acquire and use new words. A recent study by Chou (2024) found that vocabulary learning strategies should help students acquire skills in contextual guessing, skillful use of dictionaries, note-taking, paying attention to word formation, contextual encoding, and activation of newly learned words. The study also found that vocabulary learning is influenced by factors like visual and auditory encoding, structure encoding, oral repetition, and selective attention, which correlate positively with test scores. Schmitt (2019) suggested using dynamic assessment (DA), which integrates assessment and instruction to focus on potential learning rather than static knowledge. It emphasizes the need for innovative assessment tools that accurately measure both the breadth and depth of vocabulary knowledge. Traditional methods for assessing vocabulary acquisition typically include standardized tests and quizzes that measure learners' vocabulary knowledge through multiple-choice questions, fill-in-the-blanks, and matching exercises to assess recognition and recall. Another assessment tool is COLLEX (collocating lexis), which examines learners' understanding of collocational knowledge (i.e., vocabulary depth) related to frequently used words (Gyllstad, 2009). Trending assessment methods for vocabulary acquisition include the use of vocabulary journals, where learners document and reflect on new words they encounter. This approach offers insight into learners' understanding and retention of vocabulary, encouraging active engagement with the language and promoting deeper learning (Chubaryan et al., 2023). The study found that the effectiveness of vocabulary journals can be particularly useful when combined with monolingual online dictionaries and concordance tools. Additionally, Gillespie and Grishaeva (2022) examined the effectiveness of formative and summative assessments, including teacher feedback and self-assessment, and found them beneficial for continuous assessment of students' language performance. Dolosic (2018) found that self-assessment tools are crucial for incidental vocabulary learning as they help learners evaluate their understanding and progress in acquiring new words. Tools, such as self-reflection questionnaires, vocabulary journals, automated feedback, and progress trackers, allow learners to monitor their vocabulary development and identify areas of strength and weakness. Mazloomi and Khabiri (2016) recommended using self-assessment as a diagnostic tool, for encouraging students to engage in planning, monitoring, and evaluating their progress.

Furthermore, previous research (Elaish et al., 2019; Gillespie, 2020; Goksu et al., 2022; Hasumi & Chiu, 2024; Shadieff & Wang, 2022; Zhang & Zou, 2022) has indicated that technology plays a significant role in developing students' self-assessment strategies, using computer-assisted language learning, mobile-assisted language learning, and technology-enhanced language learning. These technological tools can also enhance dynamic assessment for evaluating vocabulary learning while listening to online stories. This, in turn, significantly influences learners' cognitive and metacognitive awareness, leading to improved vocabulary acquisition and overall language proficiency.

III. METHOD

The current mixed-method study investigated EFL students' perceptions of the effects of listening to online stories on incidental vocabulary acquisition. Quantitative data were collected from the students using a 5-point Likert scale questionnaire, while qualitative data were gathered from the teachers through semi-structured interviews to explore methods for assessing vocabulary acquisition. The quantitative data were statistically analyzed to measure the extent and frequency of the participants' responses. The qualitative data provided deeper insights into the underlying reasons and contexts, capturing the participants' emotions and experiences. By combining both methods, the researcher was able to explore both the breadth and depth of the research problem, thereby enhancing the validity and reliability of the findings through cross-verification.

A. Research Questions

1. How do EFL students perceive the impact of listening to online stories on their vocabulary acquisition, including aspects such as word recognition, word meaning, and lexical usage (context and grammatical accuracy)?
2. To what extent do EFL students prefer acquiring vocabulary through listening to online stories compared to reading stories?

3. How does self-assessment influence the cognitive processes involved in vocabulary acquisition among EFL students who listen to stories?
4. What methods do teachers of EFL students use to assess the impact of incidental vocabulary acquisition on EFL students' language proficiency?

B. Participants

The study involved 127 EFL Saudi female undergraduate students (ages 18-20) EFL students selected from a public university, in Riyadh, Saudi Arabia. who have Arabic as their mother tongue and six years of prior English education. They study courses focused on English communication and language acquisition, covering theories and stages of first and second language acquisition. Additionally, 30 female teachers (ages 25-60) from the same department contributed to the qualitative data. These teachers, with 5-20 years of experience, teach English and courses on language acquisition, sociolinguistics, psycholinguistics, CALL, and educational assessment, with Arabic as their native language.

C. Instruments

Two instruments were used in the present study, each accompanied by a consent form. The first instrument was a 5-point Likert scale questionnaire designed to collect quantitative data. It consisted of three sections with ten items each, addressing the first three research questions. The second instrument was a semi-structured interview containing four open-ended questions, aimed at answering the fourth research question.

D. Procedures

Both instruments were validated through pilot studies. Quantitative data were analyzed using IBM-SPSS® (version 25.0) with descriptive (frequency, percentage, mean, standard deviation) and inferential (Pearson correlation) analyses. For qualitative data, NVivo (version 14) was employed to identify themes within the texts. Initial data codes captured participants' experiences, which were then organized into themes reflecting significant patterns regarding the methods teachers use to assess the impacts of incidental vocabulary acquisition on EFL students' language proficiency.

E. Research Limitations

The present study was limited to 127 female undergraduate students studying EFL and 38 female teachers teaching EFL and applied linguistics. All participants were affiliated with the English Department, at a public university, in Riyadh, Saudi Arabia. The study did not include students from the male section due to social constraints. Additionally, the time span covered by the study was only one semester of the academic year 2024.

IV. RESULTS

Quantitative data analysis, using IBM-SPSS® (version 25.0), revealed high internal consistency and validity, with Pearson correlation coefficients ranging from .674 to .947 and an overall Cronbach's Alpha of .907, indicating strong reliability. Individual reliability coefficients ranged from .864 to .887, and the overall stability was confirmed with a Cronbach's Alpha of .960. NVivo® (version 14) facilitated qualitative analysis through thematic, content, and discourse analysis, ensuring methodological triangulation. This approach enhanced the reliability and credibility of the qualitative findings.

Answering Study Questions

Q1: How do EFL students perceive the impact of listening to online stories on their vocabulary acquisition, including aspects such as word recognition, word meaning, and lexical usage (context and grammatical accuracy)?

The study used frequencies, percentages, means, and standard deviations to assess EFL students' perceptions of the impact of listening to online stories on their incidental vocabulary acquisition. The results indicated that students reported that listening to online stories significantly enhanced their vocabulary acquisition, including word recognition, understanding meanings, and using words in different contexts with grammatical accuracy. Key findings include: 89.8% reported increased vocabulary, 84.2% recognized words in different contexts, 85% understood meanings better, 81% improved word usage in sentences, 74% could use new vocabulary in various contexts, and 69.3% found it more effective than reading for learning word meaning. Table 1 shows the results.

TABLE 1
EFL STUDENTS' PERCEPTIONS OF THE IMPACTS OF LISTENING TO ONLINE STORIES ON THEIR INCIDENTAL VOCABULARY ACQUISITION (N=127)

N	Items	Approval degree										Mean	SD	Ranki ng
		Always		Often		Sometimes		Rarely		Never				
		F	%	F	%	F	%	F	%	F	%			
1	Listening to online stories in English outside of my classroom studies helps me to increase my vocabulary.	45	35.4	42	33.1	27	21.3	8	6.3	5	3.9	3.90	0.88	1
2	I am confident in understanding new words when I listen to online stories.	44	34.6	38	29.9	33	26.0	8	6.3	4	3.1	3.87	0.86	2
4	Listening to online stories influences my ability to recognize words in different contexts.	49	38.6	36	28.3	22	17.3	14	11.0	6	4.7	3.85	0.91	3
5	Listening to online stories helps me understand the different meanings of the same words better than just studying vocabulary lists from reading books.	40	31.5	39	30.7	29	22.8	12	9.4	7	5.5	3.73	0.96	4
6	I noticed improvements in my ability to use new words correctly in different sentences after listening to online stories.	44	34.6	31	24.4	28	22.0	15	11.8	9	7.1	3.68	0.92	5
7	Listening to online stories helps me focus on understanding the grammatical structure of sentences.	38	29.9	27	21.3	32	25.2	21	16.5	9	7.1	3.50	0.99	6
10	I noticed improvements in my pronunciation and listening comprehension after listening to online stories.	37	29.1	25	19.7	35	27.6	16	12.6	14	11.0	3.43	0.92	7
8	I can recognize the different uses of the new vocabulary that I learn from listening to online stories when I read and write in English.	31	24.4	32	25.2	27	21.3	24	18.9	13	10.2	3.35	0.95	8
9	I can use the new vocabulary that I learn from listening to online stories in different contexts.	30	23.6	31	24.4	33	26.0	18	14.2	15	11.8	3.34	0.90	9
3	I find that listening to online stories helps me learn the meaning of new words better compared to reading.	31	24.4	19	15.0	38	29.9	27	21.3	12	9.4	3.24	0.94	10
Overall mean											3.59	0.84	-	

As displayed in Table 1, the item "Listening to online stories in English outside of classroom helps to increase incidental vocabulary" received the highest mean score of 3.90 ± 0.88 , followed by the item "I am confident in understanding new words when I listen to online stories," which received a mean score of 3.87 ± 0.86 . The item "Listening to online stories influences my ability to recognize words in different contexts" ranked third with a mean score of 3.85 ± 0.91 . On the other hand, the item " I can use the new vocabulary that I learn in different contexts" ranked ninth. Furthermore, the item "I find that listening to online stories helps me learn the meaning of new words better compared to reading" received the mean score of 3.24 ± 0.94 . Figure 1 shows the impacts of listening to online stories on incidental vocabulary.

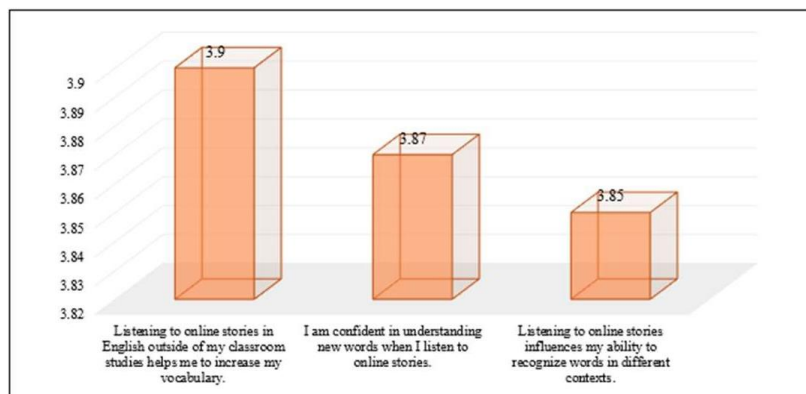


Figure 1. Impact of Listening to Online Stories on Acquiring Incidental Vocabulary

As displayed in Figure 1, the impacts of listening to online stories on acquiring accidental vocabulary include: an increase of vocabulary size, indicated by the mean score 3.90 ± 0.88 ; better understanding of new words, indicated by the mean score 3.87 ± 0.86 ; and enhancement of abilities to recognize words in different contexts, indicated by the mean score $.85 \pm 0.91$.

Q2: To what extent do EFL students prefer acquiring vocabulary through listening to online stories compared to reading stories?

The study examined EFL students' preferences for acquiring incidental vocabulary through listening to online stories versus reading. Results showed that 80.3% prefer online stories to reading them, with a mean score of 3.56.

Similarly, 79.5% of students prefer learning new vocabulary from audiobooks over reading, with a mean score of 3.73. Additionally, 77.95% favor listening to online stories rather than reading, with a mean score of 3.54, and 80% reported achieving significant vocabulary improvement from listening, with a mean score of 3.32. Furthermore, 71.6% use Artificial Intelligence (AI) applications, and 66.2% use mobile storytelling applications to learn new vocabulary. Table 2 shows the results.

TABLE 2
EFL STUDENTS' PREFERENCES OF ACQUIRING INCIDENTAL VOCABULARY THROUGH LISTENING TO ONLINE STORIES COMPARED TO READING STORIES (N=127)

N	Items	Approval degree										Mean	SD	Ranking
		Always		Often		Sometimes		Rarely		Never				
		F	%	F	%	F	%	F	%	F	%			
2	I prefer learning new vocabulary from listening to audiobooks rather than from reading books.	46	36.2	34	26.8	21	16.5	19	15.0	7	5.5	3.73	0.95	1
3	It is easier for me to learn new vocabulary from listening to online stories than from reading them.	37	29.1	31	24.4	34	26.8	16	12.6	9	7.1	3.56	0.93	2
1	I prefer listening to online stories rather than reading them.	39	30.7	31	24.4	29	22.8	15	11.8	13	10.2	3.54	0.91	3
7	I use podcasts to learn new vocabulary.	36	28.3	25	19.7	38	29.9	12	9.4	16	12.6	3.42	0.93	4
4	It is more interesting to learn vocabulary from listening to online stories than from reading them.	37	29.1	24	18.9	31	24.4	23	18.1	12	9.4	3.40	1.00	5
6	I use audiobooks to learn new vocabulary.	32	25.2	30	23.6	36	28.3	14	11.0	15	11.8	3.39	0.90	6
5	It is faster to learn new vocabulary from listening to online stories than from reading them.	29	22.8	24	18.9	42	33.1	23	18.1	9	7.1	3.32	0.93	7
10	My vocabulary knowledge has increased from listening to online stories rather than reading them.	29	22.8	28	22.0	36	28.3	23	18.1	11	8.7	3.32	0.95	8
8	I use artificial intelligence applications to learn new vocabulary.	29	22.8	25	19.7	37	29.1	22	17.3	14	11.0	3.26	0.99	9
9	I use mobile storytelling applications to learn new vocabulary.	32	25.2	26	20.5	26	20.5	28	22.0	15	11.8	3.25	0.96	10
Overall mean											3.42	0.95	-	

As displayed in Table 2, the item "I prefer learning new vocabulary from listening to audiobooks rather than from reading books" received the highest mean score of 3.73, signifying a high preference for this method. This was closely followed by the item "It is easier for me to learn new vocabulary from listening to online stories than from reading them," which received a mean score of 3.56. Additionally, the item "I prefer listening to online stories rather than reading them" obtained a mean score of 3.54. On the other hand, item number 8, regarding (AI) applications received a mean score of 3.26, indicating that some respondents occasionally prefer this method. Lastly, item number 9, "I use mobile storytelling applications to learn new vocabulary," received a mean score of 3.25. Figure 2 shows participant's preferences based on magnitude of the mean score.

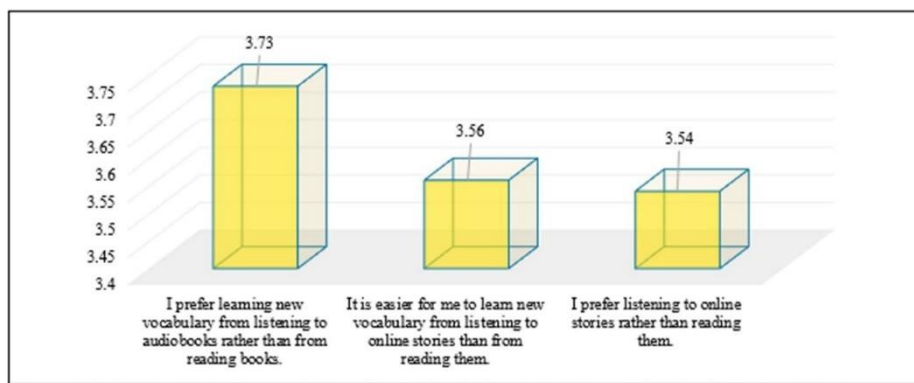


Figure 2. EFL Students' Preferences for Acquiring Incidental Vocabulary Through Listening to Stories vs Reading

Figure 2 shows that EFL students prefer listening to stories over reading them, indicated by a mean score of 3.54. They prefer listening to audiobooks over reading them, with a mean preference score of 3.73. They also find listening easier than reading, as indicated by a mean score of 3.56.

Q3: How does self-assessment influence the cognitive processes involved in vocabulary acquisition among EFL students who listen to stories?

The study examined the impact of self-assessment on EFL students' cognitive processes during incidental vocabulary acquisition from online stories. Results showed that 91.3% of participants (mean score of 4.29) found self-assessment helps connect new vocabulary with existing knowledge. About 90.5% (mean score of 4.4) noted overall improvement in English proficiency due to self-assessment. Additionally, 81.1% (mean score of 3.82) reported that it aids in inferring meanings of unfamiliar words, while 80.2% (mean score of 3.68) reported it affects strategy choice for challenging vocabulary. Self-assessment also influenced vocabulary acquisition speed and efficiency (81.1%, mean score of 3.68), understanding monitoring (73.2%, mean score of 3.45), and awareness of learning strategies (68%, mean score of 3.23). Table 3 displays results.

TABLE 3
THE INFLUENCE OF SELF-ASSESSMENT ON THE COGNITIVE PROCESSES INVOLVED IN INCIDENTAL VOCABULARY ACQUISITION AMONG EFL STUDENTS WHO LISTEN TO ONLINE STORIES

N	Items	Approval degree										Mean	SD	Ranking
		Always		Often		Sometimes		Rarely		Never				
		F	%	F	%	F	%	F	%	F	%			
4	Self-assessment during listening to online stories helps me connect new vocabulary with existing knowledge.	78	61.4	23	18.1	15	11.8	7	5.5	4	3.1	4.29	0.80	1
10	Self-assessment helps me notice overall improvement in my English proficiency after listening to online stories.	66	52.0	29	22.8	20	15.7	8	6.3	4	3.1	4.14	0.88	2
6	Self-assessment influences my ability to infer the meanings of unfamiliar vocabulary encountered in listening to online stories.	55	43.3	23	18.1	25	19.7	19	15.0	5	3.9	3.82	0.85	3
5	Self-assessment affects my attention and concentration when learning vocabulary from listening to online stories.	46	36.2	25	19.7	35	27.6	16	12.6	5	3.9	3.72	0.91	4
7	Self-assessment impacts my choice of strategies when encountering challenging vocabulary while listening to online stories.	45	35.4	28	22.0	29	22.8	18	14.2	7	5.5	3.68	0.85	5
8	Self-assessment influences the speed and efficiency of my vocabulary acquisition process during listening to online stories.	46	36.2	26	20.5	31	24.4	16	12.6	8	6.3	3.68	0.89	6
2	I believe self-assessment improves my memory of new words.	41	32.3	31	24.4	32	25.2	18	14.2	5	3.9	3.67	0.87	7
3	Self-assessment while listening to online stories helps me monitor my understanding of English content and structure.	37	29.1	27	21.3	29	22.8	24	18.9	10	7.9	3.45	0.90	8
1	I believe self-assessment helps me understand new vocabulary learned from listening to online stories.	29	22.8	30	23.6	35	27.6	21	16.5	12	9.4	3.34	0.96	9
9	Self-assessment of listening to online stories affects my awareness of my own vocabulary learning strategies and progress.	25	19.7	30	23.6	32	25.2	29	22.8	11	8.7	3.23	1.01	10
Overall mean											3.70	0.90	-	

As shown in Table 3, item number 4, "Self-assessment during listening to online stories helps connect new vocabulary with existing knowledge," had the highest perceived score of 4.29 ± 0.80 . This was followed by item number 10, "Self-assessment helps observe overall improvement in my English proficiency after listening to online stories," with a mean score of 4.14 ± 0.88 . In third place was item number 6, "Self-assessment influences my ability to infer the meanings of unfamiliar vocabulary encountered in listening to online stories," with a mean score of 3.82 ± 0.85 . However, item number 1, "I believe self-assessment helps understand new vocabulary learned from listening to online stories," received a mean score of 3.34 ± 0.96 , ranking it ninth. Finally, item number 9, "Self-assessment of listening to online stories affects awareness of vocabulary learning strategies and progress," ranked last with a mean score of 3.23 ± 1.01 . Figure 3 shows the impact of self-assessment on the cognitive processes.

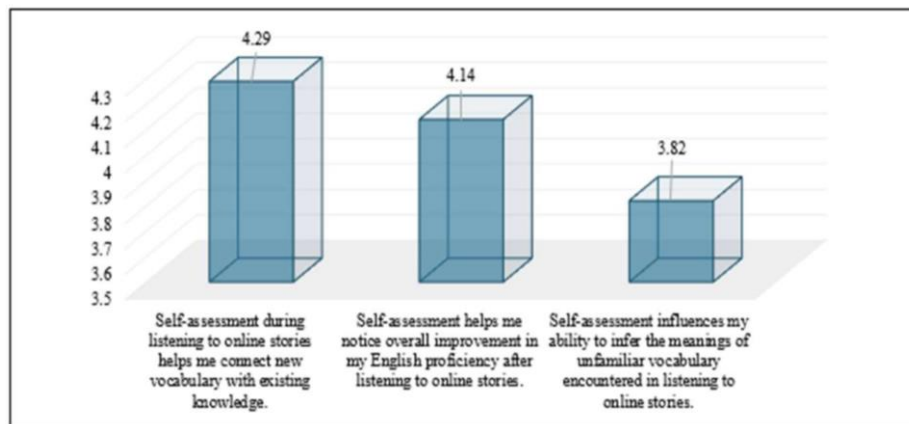


Figure 3. Influence of Self-Assessment on Cognitive Processes Involved in Incidental Vocabulary Acquisition

Figure 3 illustrates that self-assessment affects cognitive processes in incidental vocabulary acquisition from listening to online stories. Specifically, it enhances connecting new words with existing knowledge, with a mean score of 4.29 ± 0.80 , and inferring the meanings of unfamiliar vocabulary, with a mean score of 3.82 ± 0.85 .

Additionally, self-assessment contributes to evaluating overall improvement in English proficiency, as reflected by a mean score of 4.14 ± 0.88 .

Q4. What methods do teachers of EFL students use to assess the impact of incidental vocabulary acquisition on EFL students' language proficiency?

The analysis of participants' interviews identified six key themes: dynamic assessment (reported by 34 participants, 89%), technology-based tools (33 participants, 87%), vocabulary tests (32 participants, 84%), self-assessment (31 participants, 82%), vocabulary journals (29 participants, 76%), and storytelling assignment (all 28 participants, 74%). These findings are detailed in Table 4.

TABLE 4
EMERGING THEMES FROM PARTICIPANTS' INTERVIEW

Interview Emergent Themes	n (=38)	Percent (%)
Dynamic assessment (integrating assessment into instruction), involving innovative assessment tools that measure both the breadth and depth of vocabulary knowledge using data analysis reporting, assignment-based performance, observation of learning potentials)	34	89%
Technology-based tools (Quizlet, Memrise, Anki, Duolingo, LingQ, Kahoot, Grimkit, Blook, Padlet, FluentU, Wordmyth, Busuu, Lingvist, Trello)	33	87%
Vocabulary tests (standardized tests, pretest-posttest, written tests (multiple choice questions, word matching, fill-in-the-blanks, quizzes, reading comprehension, listening comprehension)	32	84%
Self-assessment (forms, questionnaires, surveys, automated feedback)	31	82%
Vocabulary journals	29	76%
Storytelling oral and written assignments	28	74%

Table 4 reveals that dynamic assessment is widely endorsed, with 34 participants highlighting its effectiveness. Participants described various approaches, including both formative and summative evaluation, tests, observations, performance data analysis, feedback, and task-based assessments. Technology-based tools were also emphasized, with participants noting the use of apps like Memrise, Duolingo, and LingQ for vocabulary learning, leveraging features such as gamification and progress tracking. Vocabulary tests, favored by 84% of participants, were discussed alongside storytelling, which was the least mentioned theme at 74%. One participant stated, "...and my assessment methods include observations, performance data analysis, control groups testing, and long-term follow-up." Another participant stated, "I focus on task-based assessments, where in-class students engage in discussions, and out-of-class students complete related tasks independently." A third participant responded, "I evaluate retention through follow-up quizzes." A fourth participant noted, "I use formative and summative assessments to evaluate vocabulary acquisition. In-class students use flashcards and games, while out-of-class learners engage in reading and interactive tools. I compare test results and analyze student feedback to assess their progress." Regarding the theme of employing technology-based tools, one participant noted, "I found Memrise for vocabulary learning is effective, due to its gamified approach and spaced repetition system that helps students review words at optimal intervals. The built-in progress tracking on Memrise allows to monitor student acquisition." Another participant mentioned, "I use Duolingo's vocabulary exercises and track students' progress via its dashboard. The applications' gamified approach keeps students engaged, and the weekly progress reports helps me assess their vocabulary acquisition." One participant noted, "I use LingQ to help students learn vocabulary through reading and listening activities. I assign texts based on their interests and track vocabulary acquisition using the platform's analytics, which shows how many words they have learned." Additionally, another participant stated, "Out-of-class students engage in self-directed learning through language apps or listening to online stories. I compare test results and gather student feedback through surveys to assess their vocabulary development." Another participant reported, "I use journals to track students' vocabulary learning progress. Vocabulary journals offer insight into their retention and understanding." These comments suggest that while dynamic assessment remains popular, technology-based tools are increasingly valued for assessing student retention. Table 5 details the core aspects of dynamic assessment.

TABLE 5
INVARIANT CONSTITUENTS OF THE THEME OF DYNAMIC ASSESSMENT

Invariant constituents of the benefits of dynamic assessment	n (=38)	Percent (%)
Integrating various formative and summative approaches for identifying learning potential for vocabulary acquisition development	36	95%
Developing metacognitive skills, enhancing self-regulation, self-assessment, and self-monitoring, which are crucial for vocabulary acquisition and overall language proficiency.	36	95%
Providing immediate feedback on improvements in vocabulary usage	35	92%
Supporting scaffolding during the acquisition processes	35	92%
Focusing on tracking the development of the cognitive processes of vocabulary acquisition	34	89%
Reinforcing vocabulary acquisition through repetition	32	84%

Table 5 shows that dynamic assessment is highly valued by participants for its role in vocabulary acquisition. Key components include integrating formative and summative approaches (95%), developing metacognitive skills (95%), providing immediate feedback (92%), supporting scaffolding (92%), tracking cognitive development (89%), and reinforcing learning through repetition (84%). One participant emphasized, "I prefer using dynamic assessment because it is an umbrella encompassing several interactive assessment methods such as standardized tests, quizzes, pretests-posttests, and feedback." Another stated, "I use dynamic assessment because it combines assessment and instruction into a single process to evaluate students' learning potential." Another participant noted, "[it] helps me to create learners'

profiles of strengths and difficulties, so I can guide their individualized learning.” These insights suggest that dynamic assessment fosters mediated learning experiences, where teachers’ guidance and support play a crucial role in cognitive development. Additionally, the results showed the invariant constituents of the theme of vocabulary journals. Table 6 displays the results.

TABLE 6
INVARIANT CONSTITUENTS OF THE THEME OF VOCABULARY JOURNALS

Invariant constituents of the benefits of vocabulary journals	n (=38)	Percent (%)
Increasing breadth and depth of vocabulary knowledge	36	95%
Developing cognitive skills to improve retention	36	95%
Enhancing vocabulary for functional purposes (e.g. academic, analytic, persuasive, descriptive, creative)	35	92%
Improving word definition	34	89%
Improving word association	33	87%
Improving word morphology and lexical relationships	31	82%
Using words in different contexts	31	82%

Table 6 presents the invariant constituents of vocabulary journals, including: increasing depth of vocabulary knowledge and personalized learning (95%), developing cognitive skills for improved retention (95%), enhancing vocabulary for functional purposes (92%), improving word definition (89%), improving word association (87%), and improving word morphology and lexical relationships (82%), along with using words in different contexts (82%). Participants emphasized the effectiveness of vocabulary journals in enhancing vocabulary use for functional purposes. One participant stated, “Journaling provides insights into students’ abilities to use vocabulary accurately, reflecting their understanding and retention.” Another noted, “Tasks like writing a daily journal or a story helps me assess whether students can use new vocabulary in context.” Another participant highlighted the value of vocabulary journals, stating, “It helps me in tracking students’ learning and retention, especially when paired with listening comprehension tests.” Additionally, one participant noted, “I use listening comprehension tests with vocabulary- related questions and vocabulary journals to assess students’ vocabulary skills.” Additionally, one participant reported, “I use vocabulary journals, asking students to write a story each day, then I use listening and reading comprehension tests to evaluate their abilities to recognize and understand vocabulary in spoken and written language.” Another participant noted, “Vocabulary journals allow students to record and reflect on new words, offering ongoing insight into their learning process and retention.” Overall, these comments suggest that vocabulary journals play a crucial role in analyzing development in vocabulary knowledge and usage.

V. DISCUSSION AND FINDINGS

The findings underscore the positive effects of listening to online stories on incidental vocabulary acquisition, leading to a deeper contextual understanding of words as learners encounter them in meaningful contexts (see Table 1 & Figure 1). These findings align with previous research. For example, De Vos et al. (2018) demonstrated that incidental learning is enhanced by repeated exposure to words in diverse contexts; Duong et al. (2021) found that input repetitions benefit L2 learners during oral tasks; and Karami and Bowles (2019) observed that incidental vocabulary learning occurs spontaneously through listening. The current study’s findings also support earlier research by Arndt and Woore (2018), Stoffelsma et al. (2024), Teng (2022), and Webb and Rodgers (2020), which highlights the effectiveness of online platforms and multimedia tools in expanding vocabulary knowledge.

Additionally, the findings align with previous studies by Laufer and Vaisman (2023), which found that out-of-classroom L2 vocabulary acquisition benefits from digital activities, as well as with those by Abdollahpour and Maleki (2023), which indicated that mobile-assisted applications enhance vocabulary learning outside the classroom, and Feng and Webb (2020) and Majuddin et al. (2021), which asserted that listening and audiovisual materials improve vocabulary acquisition through interaction and repetition. The current study also revealed that EFL students preferred learning new vocabulary incidentally through listening to online stories rather than through reading (see Table 2 & Figure 2). Other findings from the present study indicate that learning vocabulary through online stories engages various cognitive processes and offers unique benefits, such as active engagement and reinforcement of word recognition. In harmony with these findings, Lee and Jang (2021) emphasized that narrative- based activities enhance cognitive processes essential for vocabulary development, including inferencing and semantic mapping. Kwak (2020) found that listening to stories improves auditory learning by familiarizing learners with language sounds, patterns, and natural pronunciation, which aligns with Chang and Wu’s (2019) assertion that story listening creates immersive situations that engage students in learning new words. Smith et al. (2022) also found that storytelling effectively promotes vocabulary development by embedding word meanings in meaningful contexts. Zeng and Goh (2018) highlighted the importance of listening comprehension in mastering English, highlighting its role in recognizing information and interpreting nuances. Nguyen and Le (2023) found that modern technology, such as mobile apps and online stories, has enhanced story-based learning. Additionally, the present study revealed that self-assessment significantly affects the incidental vocabulary acquisition of EFL students through online stories, influencing their ability to infer unfamiliar vocabulary meanings (see Table 3 &

Figure 3). The findings indicate that self-assessment notably enhances students' abilities to infer the meanings of unfamiliar vocabulary from online stories. Extensive research supports these findings, showing that technology, including computer-assisted, mobile-assisted, and technology-enhanced language learning, plays a crucial role in developing self-assessment strategies and boosting engagement, and self-regulation among EFL learners (Elaish et al., 2019; Gillespie, 2020; Goksu et al., 2022; Shadiev & Wang, 2022; Zhang & Zou, 2022). The present study findings also highlight the effectiveness of various assessment methods used by teachers to assess vocabulary acquisition, such as dynamic assessment, vocabulary tests, feedback, vocabulary journals, and storytelling assignments (see Table 4, 5, & 6). These findings align with previous research, indicating that both formative and summative assessments, including teachers' feedback, tests, and self-assessment, have been shown to improve language performance (Gillespie & Grishaeva, 2022). Schmitt (2019) noted that dynamic assessment, which combines assessment and instruction, focuses on learning potential rather than static knowledge. Additionally, Chubaryan et al. (2023) found that vocabulary journals support explicit vocabulary learning, promoting student autonomy and independent learning.

VI. RECOMMENDATIONS AND CONCLUSION

The current study addressed some of the challenges faced by EFL students at a public university in Riyadh, Saudi Arabia, when learning vocabulary. These students believe that direct vocabulary instruction is insufficient for their vocabulary development, noting that their reading materials emphasize comprehension and memorization rather than providing opportunities for authentic vocabulary use.

Consequently, their vocabulary development often relies on exposure to written and spoken language in academic settings. The study aimed to investigate EFL students' perceptions of how listening to online stories affects incidental vocabulary acquisition, focusing on three key areas: word recognition, meaning connection, and word usage. Based on the findings, the study recommends expanding learning beyond the classroom and encouraging students to use online stories to enhance their incidental vocabulary acquisition. Online platforms offer diverse resources that can improve vocabulary acquisition, aid in understanding and developing cognitive processes, and help students track their progress through self-assessment. The study also analyzes trending methods for assessing vocabulary acquisition, including online websites, mobile applications, vocabulary journals, and storytelling assignments. Additionally, the study reveals the methods teachers use to assess vocabulary acquisition and their influence on overall language proficiency. These methods include dynamic assessment, which combines formative and summative approaches, vocabulary pretests and posttests, instructor feedback, and task-based performance assessment. The study recommends incorporating vocabulary journals as part of dynamic assessment to provide personalized learning experiences, helping students develop vocabulary for functional purposes and improving morphological, lexical, and semantic aspects. The significance of this study stems from addressing a gap in the literature regarding incidental vocabulary learning through listening to online stories. It contributes to understanding the immediate and long-term effects of this learning method, explores students' awareness of the cognitive processes involved in incidental vocabulary acquisition, and highlights the role of self-assessment in vocabulary development.

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