

A Needs Analysis of Students' Vocabulary Learning as a Foundation for Web-Based EFL Material Design

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ABSTRACT

This study aims to investigate secondary school students' vocabulary learning needs in web-based English as a Foreign Language (EFL) contexts by examining their learning goals, perceived vocabulary proficiency, learning preferences, learning challenges, and the use of web-based learning platforms. This study employed a descriptive needs analysis involving 63 Grade X students at a public senior high school in Indonesia. Data were collected through questionnaires, semi-structured interviews, and classroom observations. Quantitative data were analyzed using descriptive statistics, while qualitative data were analyzed thematically to support and enrich the quantitative findings. The findings indicate that most students perceive their vocabulary proficiency to be at the beginner level and demonstrate a strong need for contextualized vocabulary learning supported by multimedia features. Students also reported, difficulties related to limited vocabulary mastery, low vocabulary retention, and insufficient exposure to English outside the classroom. Furthermore, although students viewed web-based learning platform as beneficial for enhancing engagement, they emphasized the need for clear instructional guidance to maximize their learning effectiveness. Unlike previous studies that separately examined vocabulary learning or web-based technology, this study integrates students' vocabulary needs, perceived proficiency, learning preference, learning challenges, and web-based learning expectations into a single comprehensive needs analysis. This integrated profile provides an empirical basis for designing learner-centered web-based vocabulary materials specifically for Indonesian secondary school EFL learners.

INTRODUCTION

Language skills play a crucial role in students' academic success, as they enable learners to understand, process, and communicate information effectively across subject areas. English language proficiency is fundamental to academic engagement and knowledge construction, particularly at the secondary school level, where students are expected to engage with increasingly complex texts and higher-order thinking skills (Richards, 2015). Recent empirical evidence further demonstrates that English language proficiency significantly learners' ability to cope with academic language demands and reduces linguistic challenges encountered in English medium learning environments (Aizawa et al., 2023). However, many Indonesia secondary school students continue to experience difficulties in learning English, which negatively affects their academic performance (Siswanto et., 2024). This condition highlights the importance of identifying learners' actual language needs to supports more effective English language instruction.

Needs analysis has long been recognized as a systematic approach to identifying learners' target needs and learning needs (Hutchinson & Waters, 1987). It provides empirical information that assists educators in designing instruction that is responsive to learners' goals, proficiency level, learning preferences, and contextual challenges (Richards, 2015). Recent studies have reaffirmed that needs analysis is an essential

preliminary stage for developing effective web-based language learning materials because it ensures that instructional design is aligned with learners' actual needs and learning contexts (Yazid et al., 2025). Therefore, conducting a comprehensive needs analysis is fundamental to developing relevant and effective instructional materials.

Among the various components of language proficiency, vocabulary is widely recognized as one of the most essential foundations for successful language learning and communication. Vocabulary knowledge supports learners' reading comprehension, listening comprehension, speaking, and writing abilities (Nation, 2001; Schmitt, 2010). Recent empirical studies have also shown that technology-enhanced vocabulary instruction improves vocabulary acquisition, learner engagement, and motivation in EFL classrooms (Aswad et al., 2022; Quinonez-Beltran, 2022). These findings indicate that vocabulary development remains a priority in English language instruction, particularly for secondary school learners

The rapid development of educational technology has expanded opportunities for language learning beyond traditional classroom settings. Web-based learning environments provide learners with flexible access to authentic learning resources, multimedia content, and interactive learning activities that facilitate vocabulary development (Lee et al., 2022). Recent studies further demonstrate that web-based language instruction improves vocabulary learning outcomes and fosters positive learner attitudes toward English learning (Aswad et al., 2022). Moreover, effective web-based learning platforms should be designed based on learners' needs and supported by appropriate instructional design principles to maximize learning effectiveness (Karademir et al., 2021; Rossydi et al., 2026). Nevertheless, despite these advantages, the implementation of web-based vocabulary learning in Indonesian secondary schools remains relatively limited compared with higher education settings (Muallim et al., 2024).

The secondary school level represents a critical stage in language development. According to Warnby (2023), students at this stage begin to develop more complex academic. Vocabulary required for reading comprehension and written communication. However, vocabulary instruction in schools often remains teacher-centered and relies heavily on conventional methods (Nunan, 2015). Alfath et al. (2025) report that such instructional practices may not sufficiently accommodate students' actual learning needs, resulting in persistent difficulties in vocabulary mastery. This mismatch between instructional practices and learners' needs suggests the necessity of conducting a needs analysis focused on student' vocabulary learning experiences.

Although previous studies have demonstrated the potential of web-based learning to support vocabulary acquisition, its effectiveness is influenced by contextual factors such as students' access to technology, learning preferences, and perceived learning Shadiev and Wang (2022) state that web-based learning can facilitate vocabulary acquisition when supported by appropriate learning conditions. Similarly, Fisal and Said (2023) emphasize that mobile and web-based learning media can accelerate vocabulary acquisition by providing multimodal input and flexible learning opportunities. However, uneven access to technology and varying levels of digital literacy in secondary school contexts may limit the effectiveness of such approaches, underscoring the need for an in-depth examination of students' needs and learning conditions.

In response to these issues, this study aims to investigate secondary school students' vocabulary learning needs in web-based English as a Foreign Language (EFL) contexts. Specifically, the study seeks to identify students' vocabulary learning goals, perceived

vocabulary proficiency, learning preferences, learning challenges, and their use of web-based learning platform. By examining these aspects, this study provides an empirical needs profile that serves as a foundation for the future development of web-based vocabulary learning materials tailored to the learning needs of secondary school students.

RESEARCH METHOD

Research Design

This study employed a descriptive needs analysis design to investigate secondary school students' vocabulary learning needs in web-based English as a Foreign Language (EFL) contexts. A descriptive approach was considered appropriate because it enabled the researcher to obtain a comprehensive understanding of students' learning goals, perceived vocabulary proficiency, learning preferences, learning challenges, and the use of web-based learning platforms. The findings of this needs analysis provide empirical information to support the future development of web-based vocabulary learning materials.

Participants

The participants consisted of all students (N= 63) from two classes at SMAN 1 Pinrang, South Sulawesi, Indonesia. A convenience sampling technique was employed because the participants were readily accessible during the data collection period and actively participated in regular English learning activities. The researcher coordinated with the English teacher to administer the questionnaire and facilitate participant involvement. Given the exploratory nature of this needs analysis, convenience sampling was considered appropriate. However, the findings should be interpreted within the specific context of the study and should not be generalized to other educational settings.

Instruments

Data were collected using three instruments a questionnaire, semi-structured interviews, and classroom observations. The use of multiple instruments was intended enhance data credibility through methodological triangulation (Creswell, 2014). The questionnaire was designed to gather quantitative data related to students' vocabulary learning needs, including learning goals, perceived proficiency, learning preferences, learning challenges, and the use of web-based learning platform. The questionnaire items were developed based on established concepts in needs analysis and vocabulary learning literature, particularly the framework of target needs and learning needs proposed by Hutchinson and Waters (1987). The questionnaire consisted of closed ended items using a Likert scale format and multiple-choice questions to facilitate descriptive analysis. To complement the questionnaire data, semi structured interviews were conducted with a subset of students and English teacher. The interviews aimed to obtain deeper insights into students' vocabulary learning experiences, challenges, and perception of web-based learning. In addition, classroom observations were carried out to document instructional practices and students' engagement during vocabulary related learning activities. The observation data were used to support and contextualize the findings obtained from the questionnaire and interviews.

Validity and Reliability of instruments

To ensure content validity, the questionnaire was reviewed by two experts in English language education who evaluated the evinces, clarity, and appropriateness of the item in relation to the research objective (Creswell, 2014). Feedback from the experts was used to revise ambiguous wording and improve the alignment between the questionnaire items and the constructs being measured. Given the exploratory nature of the study and the descriptive research design, reliability was addressed at a procedure level. The questionnaire items were written using clear and unambiguous language to minimize misinterpretation. In addition, data from the questionnaire were cross-checked with interview and observation findings to enhance the trustworthiness of the results. Although given the exploratory nature of the study, instrument credibility was strengthened through methodological triangulation involving questionnaires, interviews, and classroom observations. In addition, expert review was conducted to ensure the relevance and clarity of the questionnaire items.

Data Collection Procedures

Data collection was conducted during the regular English leaning schedule. First, questionnaires were administered to all participants. Subsequently, semi-structured interviews were conducted with selected students to obtain more detailed information regarding their vocabulary learning experiences and needs. Classroom observations were then carried out to examine students' learning activities and to triangulate carried out to examine students' learning activities and to triangulate the findings from the questionnaires and interviews.

Data Analysis

Quantitative data obtained from the questionnaire were analyzed using descriptive statistics, Quantitative data were analyzed descriptively to identify dominant patterns related to students' vocabulary learning needs, perceived proficiency levels, learning preferences, and challenges. Qualitative data from interviews and observation were analyzed thematically to identify recurring patterns related to students' learning challenges and perceptions. The qualitative findings were used to clarify and support the quantitative results rather than to generate separate conclusions.

Ethical Considerations

This study adhered to ethical principles for research involving human participants. Prior to data collection, participants were informed about the objectives and procedures of the study. Participation was entirely voluntary, and informed consent was obtained before questionnaire administration and interviews. Participants were assured that their responses would remain anonymous and confidential, and no personally identifiable information was collected. All data were stored securely and used exclusively for academic and research purposes. Participants were also informed of their right to withdraw from the study at any stage without any negative consequences.

RESULTS AND DISCUSSION

Results

1. Essential Text Types and Learning Topics

This section presents the findings of the needs analysis conducted with Grade X students of SMAN 1 Pinrang. The findings focus on the text types and learning topics perceived by students as relevant to their English learning experiences.

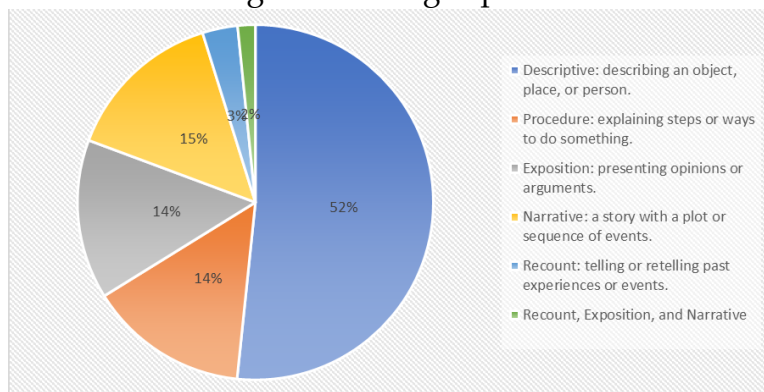


Figure 1. Type of text preferred by the students

The findings indicate that descriptive texts were the most frequently selected text type, chosen by 52% of the students. In contrast, narrative texts were selected by 15% of students, while exposition and procedure texts were each selected by 14% of respondents. Only a small proportion of students reported recount texts (3%), whereas 2% indicated a combination of recount, exposition, and narrative texts.

These findings suggest that descriptive texts remain the dominant instructional text type encountered by Grade X students. The dominance of descriptive texts may reflect the emphasis of the current curriculum on introducing students to basic descriptive language use and contextual vocabulary related to people, places, and objects. This tendency also indicates that students are more familiar with vocabulary learning activities embedded within descriptive contexts than with more cognitively demanding text genres such as exposition texts.

The questionnaire findings were supported by interview and classroom observation data. During the interview, the English teacher explained that descriptive and narrative texts are emphasized in Grade X instruction because they are considered more accessible for beginner level learners. Classroom observations further revealed that English learning activities predominantly relied on printed textbooks and instructional modules, with descriptive texts frequently used as the primary learning materials.

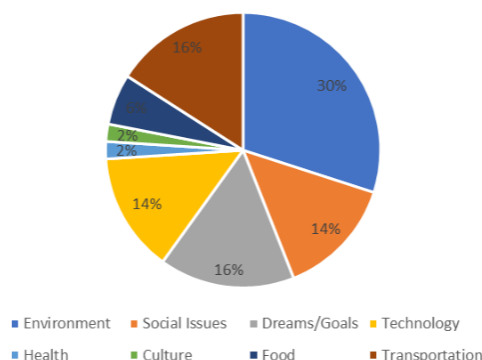


Figure 2. Topic of text preferred by the students

The findings revealed that environmental topics were selected by 30% of students as the most relevant theme for English learning. In addition, 16% of students selected topics related to dreams and aspirations, while another 16% preferred music-related topics. Social issues and technology and food topics were selected by 6 % respectively. Only a small proportion of students preferred topics related to culture (2%)

These findings imply that students tend to prefer learning topics that are closely connected to their daily experiences, personal interests, and contemporary social issues. The preference for environmental themes may also indicate students' familiarity with environmental discussions frequently presented in school learning materials and public media. And aspirations suggests that students are more motivated when vocabulary learning activities are connected to emotionally engaging and personally meaningful contexts.

This finding supports the view that contextualized learning materials contribute positively to students' motivation and engagement in language learning (Nation, 2001; Schmitt, 2010). Therefore, the integration of relevant and meaningful topics into web-based vocabulary materials may help increase students' participation and vocabulary retention during learning activities.

2. Vocabulary Challenges and Student Proficiency Levels

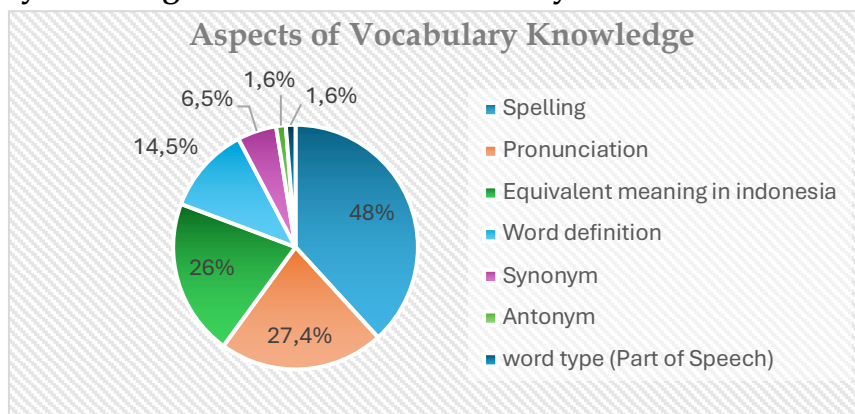


Figure 3. Challenges in Vocabulary Knowledge

The findings demonstrate that spelling was perceived as the most challenging aspect of vocabulary knowledge, reported by 48% of students. Pronunciation difficulties were identified by 27.4% of respondents, while 26% reported difficulties related to identifying Indonesian equivalents or word meanings. Smaller proportions of students reported challenges associated with word definitions (14.5%), synonyms (6.5%), antonyms (1.6%), and word types (1.6%).

These findings suggest that students experience greater difficulties with productive and form-related aspects of vocabulary knowledge that with broader semantic relationships. Difficulties in spelling and pronunciation may indicate limited exposure to authentic spoken English input and insufficient opportunities for repeated vocabulary practice in meaningful contexts. Such findings are consistent with Schmitt, N. (2026), who emphasizes that vocabulary mastery involves not only meaning recognition but also accurate pronunciation, spelling, and contextual usage.

The questionnaire findings were further supported by interview and classroom observation data. During the interview, the English teacher reported that most grade X students demonstrated limited vocabulary mastery and often experienced difficulties in

applying vocabulary accurately across different text types. Classroom observation also revealed that students frequently struggled with spelling accuracy and pronunciation during vocabulary related classroom activities.

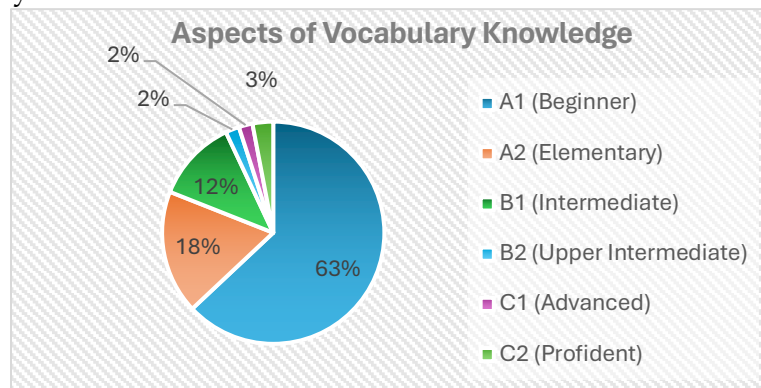


Figure 4. Students' vocabulary Proficiency level

The findings revealed that 63% of students perceived themselves as being at the A1 level. While 18% identifies themselves at the A2 level and 12% at the B1 Level. Only a small proportion of students reported higher proficiency levels, including B2 (2%), C1 (2%), and C2 (3%). These findings indicate that the majority of students still perceive their vocabulary proficiency as relatively limited, particularly in productive vocabulary use. The dominance of beginner level self-perception may reflect students' limited exposure to English outside classroom environments and the continued reliance on conventional vocabulary learning approaches emphasizing memorization rather than communicative application.

The interview findings further confirmed this tendency. The English teacher explained that students generally possess only basic vocabulary knowledge and often encounter difficulties when attempting to use vocabulary appropriately in different communicative situations. Classroom observations also indicated that students tended to rely heavily on teacher guidance during vocabulary related activities, particularly when dealing unfamiliar words and pronunciation tasks.

The results imply that future web-based vocabulary learning material should provide stronger support for vocabulary practice, pronunciation modeling, repeated lexical exposure, and contextualized vocabulary use, such support is particularly important for beginner-level learners who require scaffolded learning experiences to gradually develop vocabulary competence and confidence in language use.

3. Preferred Vocabulary Learning Strategies

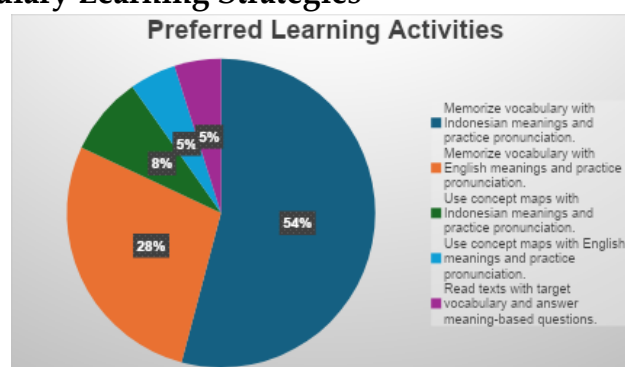


Figure 5. Students' preferred vocabulary learning strategies

The findings demonstrated that memorization-based strategies remained the most dominant approaches employed by students in vocabulary learning. Approximately 54% of the students preferred memorizing vocabulary alongside Indonesian meanings, while 28% favored memorizing vocabulary with English definitions or explanations. Pronunciation practice was also identified as a frequently utilized strategy among students. In contrast, only a small proportion of students preferred concept mapping strategies using Indonesia meaning (8%) and English meanings (5%). Another 5% of students reported preferring reading activities containing target vocabulary followed by comprehension questions focused on meaning recognition.

These findings suggest that students continue to rely heavily on traditional memorization-oriented vocabulary learning strategies. This tendency may reflect prevailing classroom practices that emphasize vocabulary retention and translation-based instruction rather than communicative and contextualized vocabulary use. Although memorization strategies can facilitate short-term vocabulary recall, excessive dependence on rote learning may hinder students' ability to apply vocabulary flexibly and appropriately in authentic communicative contexts.

The present finding aligns with the theory proposed by Norbert Schmitt (2010), who argues that effective vocabulary acquisition requires a balance between memory-based strategies and meaning-focused learning activities. Likewise, I. S. P. Nation (2001) emphasizes that repeated contextual exposure significantly contributes to long term vocabulary acquisition and retention.

Furthermore, the interview finding supported the questionnaire results. The English teacher explained that students frequently engaged in repetition and imitation activities during vocabulary learning, particularly when following pronunciation models provided in classroom instruction. The teacher also noted that students tended to recognize vocabulary more easily when encountering familiar lexical items commonly found in games, songs, and social media content.

Classroom observations additionally revealed that most students were able to use simple vocabulary items during self-introduction and descriptive speaking activities. However, they still demonstrated hesitation and limited confidence when attempting to use unfamiliar vocabulary independently in more complex communicative tasks. This finding suggests that students' receptive vocabulary knowledge is more developed than their productive vocabulary ability, as they were generally able to recognize and understand familiar words but experienced difficulties in using them accurately and spontaneously in communication.

4. Expectations for Web-Based Learning

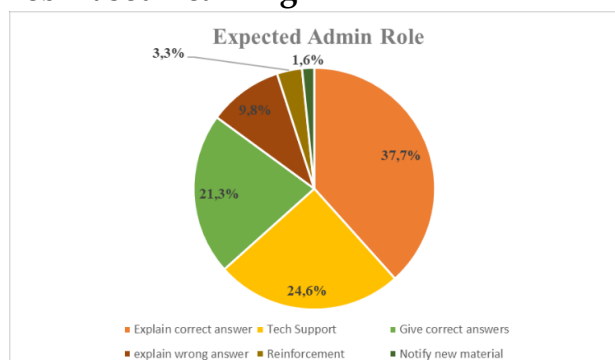


Figure 6. Students' preferred admin role in the website

Figure presents students' preferred learning roles in a web-based vocabulary learning environment based on questionnaire responses. The results show that 37.7% of students preferred actively memorizing vocabulary lists and their meanings, while 24.6% preferred using concept maps. In addition, 21.3% of students favored reading texts followed by comprehension questions, and 9.8% preferred listening to and imitating pronunciation. Only 3.3% of students preferred a more limited role, such as answering vocabulary questions only. The indicate that students prefer web-based learning activities that findings indicates that students prefer web-based learning activities that involve active engagement with vocabulary learning processes rather that passive instructional participation. Students also appear to value multimedia-supported learning experiences involving pronunciation support, contextual examples, and interactive learning activities.

The interview findings supported these results. The English teacher explained that vocabulary learning activities supported by audio pronunciation models, contextual examples, and related word information are particularly helpful for students. The teacher also emphasized the importance of repeated vocabulary exposure and interactive learning support in improving students' vocabulary mastery. The findings imply that future web-based vocabulary materials should incorporate multimodal learning elements, including pronunciation audio, contextual vocabulary examples, interactive exercises, and visually engaging learning activities. Such features may help address students' vocabulary learning difficulties while simultaneously increasing motivation and engagement in EFL learning environments.

Discussion

Text Types and Learning Topics

The findings indicate that descriptive texts remain the dominant learning materials encountered by Grade X students. This preference is likely associated with the characteristics of beginner-level EFL learners who require concrete and familiar language before progressing to more cognitively demanding genres. One possible explanation is that students with limited vocabulary knowledge tend to prefer text genres containing familiar lexical items, allowing them to comprehend texts with lower cognitive demands. This finding suggests that genre familiarity influences both vocabulary acquisition and learners' confidence during reading activities. Descriptive texts typically contain vocabulary related to everyday people, places, and objects, making them more accessible and meaningful for learners with limited English proficiency.

The predominance of descriptive texts also reflects current instructional practices in Indonesian secondary schools, where vocabulary learning is often introduced through familiar and contextualized topics. While this approach facilitates initial vocabulary acquisition, prolonged reliance on a limited range of text genres may reduce students' opportunities to encounter more diverse lexical items and academic vocabulary. Consequently, students may develop adequate receptive vocabulary while experiencing difficulties in transferring vocabulary knowledge to more complex communicative contexts. Without gradual exposure to more diverse genres, students may experience difficulties developing higher-order vocabulary required for academic reading and communicative tasks.

This finding is consistent with Tao and Modehiren (2023), who reported that repeated exposure to vocabulary across multiple text genres enhances lexical development and

contextual understanding. Likewise, Mohd Fisal et al. (2014) found that learners who engage with varied authentic texts demonstrate greater vocabulary retention and communicative competence than those exposed to a single genre. However, the present study extends these findings by demonstrating that Indonesian secondary school students not only prefer descriptive texts but also perceive them as the most supportive context for vocabulary learning, suggesting that genre familiarity influences students' learning preferences as well as vocabulary development. This finding also contributes to the existing literature by demonstrating that genre preference should be considered when designing web-based vocabulary instruction for beginner EFL learners, particularly in secondary school contexts.

Students also expressed strong preferences for learning topics related to environmental issues, personal aspirations, technology, and everyday life. These findings suggest that contextual relevance plays a critical role in sustaining learners' motivation during vocabulary learning. When vocabulary is embedded within meaningful and personally relevant contexts, learners are more likely to engage actively with learning activities and retain newly acquired lexical items. This tendency may also reflect adolescents' preference for authentic and personally meaningful learning experiences, which enhance intrinsic motivation and encourage sustained vocabulary engagement.

This finding supports Teng (2023), who argued that meaningful contextual exposure facilitates deeper vocabulary processing and long-term retention. Similarly, Shu et al. (2023) demonstrated that digital learning environments become significantly more effective when vocabulary instruction is connected to authentic themes reflecting students' real-life experiences. Therefore, future web-based vocabulary materials should integrate authentic topics that correspond to students' interests and learning contexts to promote both vocabulary acquisition and learner engagement.

Vocabulary Challenges and Students' Proficiency Levels

The findings reveal that spelling, pronunciation, and vocabulary meaning constitute the greatest challenges experienced by students. These difficulties indicate that learners have not yet developed comprehensive vocabulary knowledge encompassing word form, meaning, and use. One possible explanation is that vocabulary instruction in many EFL classrooms still emphasizes memorization rather than repeated contextual use, limiting opportunities for learners to consolidate newly acquired vocabulary into long-term memory. Instead, students appear to rely primarily on memorization of isolated lexical items without sufficient opportunities to apply vocabulary in authentic communicative situations.

The predominance of A1-level self-perceptions further confirms that most participants remain at the beginner stage of vocabulary development. This finding may be attributed to limited English exposure beyond the classroom, teacher-centered instructional practices, and insufficient opportunities for repeated vocabulary practice through meaningful communication. Moreover, limited opportunities to interact with authentic English outside the classroom may further restrict students' vocabulary growth and communicative confidence.

These findings are consistent with Aswad et al. (2022), who emphasized that vocabulary mastery requires the integration of spelling, pronunciation, meaning, and contextual use rather than isolated word memorization. Likewise, Shadieff and Wang (2022) found that technology-supported vocabulary instruction can substantially

improve pronunciation accuracy and vocabulary retention when learners receive continuous multimodal input. However, unlike previous studies that primarily evaluated vocabulary learning outcomes, the present study identifies the specific aspects of vocabulary that Indonesian secondary school students perceive as most problematic. These detailed needs profile provides practical guidance for designing web-based vocabulary materials that directly address learners' actual difficulties.

The interview and classroom observation findings further strengthen these conclusions by demonstrating that students frequently depended on teacher guidance when encountering unfamiliar vocabulary. Such dependence suggests that future web-based learning materials should provide scaffolded vocabulary instruction through pronunciation models, repeated lexical exposure, interactive exercises, and contextualized practice activities. These instructional supports may gradually improve learners' vocabulary confidence and communicative competence.

Preferred Vocabulary Learning Strategies

Students' strong preference for memorization-based vocabulary learning reflects the persistence of traditional instructional practices in Indonesian secondary schools. Although memorization facilitates short-term vocabulary recall, it may not adequately support learners in developing productive vocabulary knowledge or communicative competence. This preference may be influenced by long-established classroom practices in which vocabulary learning is frequently assessed through translation and word-list memorization. Consequently, students become accustomed to relying on memorization even though they recognize the benefits of contextual vocabulary learning.

This finding agrees with Schmitt (2010), who argue that effective vocabulary acquisition requires a balance between memory strategies and meaning-focused learning. Likewise, Nation (2001) emphasized that repeated contextual exposure is essential for transferring vocabulary from receptive to productive knowledge. More recent evidence by Teng (2023) similarly demonstrates that vocabulary retention improves significantly when learners repeatedly encounter words in meaningful communicative contexts rather than through isolated memorization. Therefore, the challenge for future instructional design is not to eliminate memorization entirely but to integrate it with communicative and contextual learning activities that promote deeper lexical processing.

However, the present study extends previous research by showing that students continue to prefer memorization despite recognizing the benefits of pronunciation practices and contextual learning. This finding suggests that future web-based vocabulary materials should gradually shift learners from translation-oriented strategies toward interactive, context-based vocabulary activities supported by multimedia resources.

Expectations for Web-Based Vocabulary Learning

The findings indicate that students expect web-based vocabulary learning environments to provide active and interactive learning experiences, rather than passive content delivery. Students particularly value learning activities involving vocabulary memorization, concept mapping, contextual reading, pronunciation practice, and direct instructional support. These preferences indicate that learners expect digital learning environments to function not only as repositories for learning materials but also as interactive learning companions. These expectations indicate that students increasingly

perceive technology as a learning facilitator rather than merely platform for accessing instructional content.

These findings are consistent with Karademir et al. (2021), who emphasized that effective web-based learning environments should integrate multimedia resources, learner interaction, and instructional guidance. Similarly, Rossydi et al. (2026) reported that learner engagement increased when web-based learning platforms provided direct feedback and interactive vocabulary practice. Nonetheless, this study provides additional evidence by demonstrating that Indonesian secondary school students require web-based learning systems specifically designed to meet their identified vocabulary learning needs, rather than generic online learning resources. Therefore, future web-based vocabulary materials should combine pronunciation audio, contextual examples, adaptive vocabulary practice, interactive quizzes, and immediate feedback to support learners' vocabulary development while maintaining motivation and engagement throughout the learning process. From a pedagogical perspective, these findings highlight the importance of designing learner-centered web-based vocabulary environments that integrate multimedia support, adaptive feedback, and contextual learning experiences. Such environments have the potential to reduce students' vocabulary learning difficulties while fostering greater learner autonomy and long-term vocabulary development.

CONCLUSION

Fundamental Findings: This study investigated the vocabulary learning needs of Grade XI hospitality students as the foundation for developing a web-based English-speaking textbook. The findings revealed that students experienced difficulties in understanding vocabulary meanings, pronunciation, spelling, and the appropriate use of vocabulary in speaking activities. Furthermore, students expressed a strong preference for contextualized hospitality-related learning materials supported by interactive multimedia features, pronunciation models, immediate feedback, vocabulary exercises, and flexible web-based access. These findings confirm that a learner-centered needs analysis serves as valuable empirical evidence for designing English learning materials that better address the characteristics and expectations of vocational high school students. **Implications:** These findings have important practical implications for English language teaching in vocational education. They suggest that web-based learning materials should integrate authentic hospitality contexts with interactive learning features that encourage vocabulary acquisition, speaking practice, learner autonomy, and continuous feedback. The results also provide curriculum developers, English teachers, and instructional designers with empirical guidance for developing technology-enhanced learning resources that are more relevant to the needs of hospitality students. **Limitations:** this study is limited to a needs analysis conducted with Grade XI hospitality students in a single vocational high school. Therefore, the findings may not fully represent the learning needs of students from other vocational programs or educational contexts. In addition, the study focused on identifying students' learning needs and did not evaluate the implementation or effectiveness of the proposed web-based English-speaking textbook. **Future Research:** Future research is recommended to developed the proposed textbook based on the identified needs and examine its effectiveness through classroom implementation using research and development or experimental research designs. Further studies involving different vocational programs, large participant

groups, and diverse educational settings are also recommended to enhance the generalizability of the findings and provide broader evidence for the development of technology-supported English learning materials in vocational education. Overall, this study contributes to the growing body of technology-enhanced language learning research by providing an integrated empirical needs profile that can guide the development of learner-centered web-based English-speaking materials for vocational high school students.

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