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THE DEVELOPMENT OF A WEB-BASED ENGLISH WETLANDS DICTIONARY TO SUPPORT THE DISSEMINATION OF ENGLISH FOR WETLANDS IN SOUTH KALIMANTAN

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Abstract: The integration of technology has become a vital component of modern education systems, especially in creating flexible learning environments. In the English for Specific Purposes (ESP) field, learning resources with contextualized vocabulary are vital tools for helping students understand specialist terminology relevant to a specific field of study, as Place-Based Education emphasizes the necessity of connecting learning to local contexts. Wetlands are a significant component of the cultural identity of the region of South Kalimantan. However, students often face difficulties in understanding wetland-related terminology because such materials are not available in English language dictionaries. Thus, this research aims to develop a web-based English-Indonesian wetlands dictionary to facilitate the delivery of English for Wetlands learning materials. This study employed a Research and Development (R&D) model as described by Sugiyono, which consists of seven steps: needs analysis, product design, development, expert validation, testing, revision, and final product. The product underwent expert validation involving content and media specialists to ensure its quality and appropriateness. Subsequently, field testing was conducted with 35 students from three higher education institutions in South Kalimantan to evaluate its usability and effectiveness. The research used a Likert-type questionnaire with 23 items to collect the data. From the findings, a majority of the respondents (82.9%) responded that the website interface is appealing and user-friendly. It is evident that the developed dictionary generated positive feedback from the users. It was considered to be very accessible and useful for the learners to understand the terms concerning the wetlands. 94,3% of the respondents were of the opinion that the developed dictionary could enhance the improvement of English vocabulary acquisition.
In conclusion, the web-based wetlands dictionary is an effective tool for ESP learning and English learning with the inclusion of information concerning the wetlands of South Kalimantan.

Keywords: *English for Specific Purposes, English for Wetlands, Web-Based Dictionary*

INTRODUCTION

Digital technology has become an essential and permanent part of modern education, influencing how teaching and learning are designed and delivered (Rosalina et al., 2020; Nasrullah & Asrimawati, 2023). In this context, incorporating web-based tools into English for Specific Purposes (ESP) teaching creates new chances to help learners' acquisition of

specialized information. At the same time, incorporating local environmental contexts, such as wetlands, into learning materials can enhance relevance and meaningful engagement. Therefore, this study is situated at the intersection of digital technology, ESP pedagogy, and local environmental context, aiming to develop a web-based learning resource that supports students' understanding of wetland-related vocabulary.

As technology is increasingly incorporated into teaching and learning methods, blended learning is becoming more widely acknowledged as a significant instructional tool in modern education. Studies indicate that blended learning enhances flexibility, learner autonomy, and digital literacy skills (Putra et al., 2025). Students may set their own learning pace and form independent study habits to blended learning, which gives them access to educational materials at any time and from any location. Additionally, the integration of digital tools such as learning management systems, online quizzes, and multimedia resources helps create more interactive and engaging learning experiences. In addition, this method allows teachers to offer a wider variety of teaching resources and feedback systems, which can enhance students' comprehension and involvement in the learning process (Nasrullah et al., 2023).

Digital technologies are still necessary to promote productive learning environments, even in post-pandemic contexts (Nasrullah et al., 2023). Educational institutions realize that digital integration is important to improve teaching and prepare students for the digital age. In addition to facilitating flexible learning, ongoing use of educational technology fosters the growth of vital 21st-century abilities like teamwork, communication, critical thinking, and digital competency. In order to ensure that teaching and learning processes grow more flexible, creative, and student-centered, it is anticipated that the integration of technology and blended learning methodologies will continue to be a crucial part of contemporary educational systems (Yamin et al., 2025).

English for Specific Purposes (ESP) in English language instruction places a strong emphasis on contextualized language learning that is adapted to the unique requirements of students within specific academic or professional domains (Pongsapan & Mangoki, 2025). English for Wetlands, a specialist branch of ESP that combines knowledge of wetland habitats with English language instruction, is one new contextual focus in South Kalimantan. In addition to helping students become more fluent in English, this course exposes them to environmental terminology, concepts, and problems related to wetlands (Rusmanayanti, 2020). Students are anticipated to gain both linguistic proficiency and environmental awareness through this integration, especially with reference to the distinctive features of wetland settings in their local context.

In South Kalimantan, wetlands are essential for the environment, economy, and culture. Wetlands serve as natural water regulators, habitats for biodiversity, and carbon storage systems (Amelia & Chandra, 2021). Economically, they sustain local livelihoods through tourism, agriculture, and fishing. Wetlands have a strong cultural connection to the traditional ways of life and local knowledge of the surrounding communities. Universitas Lambung Mangkurat (ULM) has established wetlands as a unique area of academic excellence within its institutional vision in recognition of the strategic significance of wetlands. As a result, it is recommended that different academic programs, including English language instruction, incorporate wetland-related issues into their curricula through technology-enhanced and blended learning environments.

Even though wetland issues are increasingly being included in the curriculum, students struggle to understand and translate technical wetland-related vocabulary. Most standard English dictionaries do not cover a wide range of technical vocabulary relevant to wetland habitats, environmental processes, or biodiversity. As a result, students struggle to grasp scientific texts. This challenge is exacerbated by the prevalence of cultural-linguistic terminology exclusive to South Kalimantan, such as local names for marsh flora and environmental aspects that have no exact parallels in English. As a result, students struggle not only to understand scientific concepts, but also to articulate locally based knowledge accurately in English. Because of this, students find it difficult to comprehend scientific material, analyze environmental concepts, and articulate thoughts connected to wetlands in English. Therefore, a specialized learning resource that offers easily available and contextually appropriate wetland vocabulary is needed, especially one that can be included into mixed and technology-based learning contexts.

The incorporation of wetland subjects into teaching materials has been the subject of several prior studies. Wetlands-based learning resources were created by researchers (Arini & Fadilla, 2022) to help young students learn about the environment through English. Similarly, in order to assist international students studying in South Kalimantan, Amelia and Chandra (2021) created Bahasa Indonesia for Foreign Speakers (BIPA) materials that include topics relating to wetlands. Furthermore, recent research showed that students' critical thinking abilities and involvement in environmental learning can be positively impacted by mobile learning applications that incorporate wetland issues (Listia et al., 2023). According to these studies, incorporating wetland environments into instructional materials can greatly improve student engagement and learning relevance.

However, despite the creation of various education resources and apps concerning the topic of wetlands, a multilingual web-based dictionary for wetlands specifically intended to help with English learning is still not available. Moreover, the wetlands-related environmental technical vocabulary is not commonly included in the various dictionaries that focus on general vocabulary. Additionally, most of the available education resources were not specifically intended to be easily accessed by the students through an interactive online platform.

In order to facilitate the spread of English for Wetlands in South Kalimantan, this study intends to create an online English–Indonesian wetlands dictionary. It is anticipated that the dictionary will offer a thorough vocabulary pertaining to wetland habitats, together with definitions, translations, and contextual explanations that can help students grasp technical terms. The dictionary can also provide more accessibility by using a web-based platform, allowing researchers, educators, and students to access words related to wetlands at any time and from any location. In the end, this development is anticipated to assist the promotion of wetland knowledge as a unique academic focus in South Kalimantan and enhance English learning resources.

The development of the online English–Indonesian wetlands dictionary that facilitates English for Wetlands as a contextual domain of English for Specific Purposes (ESP) is what sets the present study apart. Unlike other dictionaries, the present one will include significant environmental concepts that are associated with wetland habitats. Furthermore, the online nature of the dictionary will enable the effective searching of vocabulary for the use of teachers and students. The dictionary will serve as a specialized academic learning tool as well as contribute to the institutional goal of Universitas Lambung Mangkurat as a Wetlands University by focusing on the relevant vocabulary for the region of South Kalimantan.

Wetlands-Based Educational Integration

Local environmental identity is incorporated into academic curriculum through wetlands-based education. Contextual resources increase students' awareness and critical involvement, according to research (Rusmanayanti, 2020; Listia et al., 2023). However, rather than lexical databases, the majority of innovations concentrate on reading materials or mobile applications. Therefore, the development of an online wetlands dictionary addresses an existing gap in the literature.

RESEARCH METHODOLOGY

This study used a Research and Development (R&D) approach based on Sugiyono's model (2019), which involves numerous systematic steps such as needs analysis, product design, development, expert validation, testing, revision, and final product. Although these stages are given in sequence, the model's execution in this study was essentially iterative. That is, each stage informed the subsequent refinement, allowing for ongoing product improvement.

Expert validation results were used to update the initial prototype for content correctness, linguistic clarity, and interface design. Following that, the updated product was field tested with students, who provided valuable comments on usability, functionality, and learning efficacy. The results of the testing phase were then used to make additional adjustments, ensuring that the product better fit the demands of users and learning situations.

This cyclical process of evaluation and adjustment follows the underlying premise of R&D, which holds that product development is recursive rather than linear. The revision stages serve as feedback loops, connecting the validation and testing phases to further improvements, resulting in a more polished and context-appropriate final product. This iterative technique improves the validity, usability, and effectiveness of the generated learning material.

1. Needs Analysis

The needs analysis stage was conducted to identify students' difficulties in learning English for Wetlands, particularly in understanding and translating wetland-related terminology. Based on classroom observations and informal discussions with students of the English Department, it was found that many technical and environmental terms specific to wetlands were not available in general English dictionaries. Students experienced challenges in interpreting scientific texts and translating contextual vocabulary related to peatlands, swamps, and local ecological concepts.

This stage confirmed the urgency of developing a specialized bilingual (English–Indonesian) wetlands dictionary that could support vocabulary acquisition and translation accuracy in the English for Wetlands course.

2. Product Design

In this stage, the conceptual framework and technical structure of the web-based dictionary were designed. The research team collaborated with an IT developer to determine the website layout, database system, and user interface.

The dictionary was designed to include:

a) English–Indonesian word entries
b) Clear definitions
c) Save-word feature
d) Supporting picture related to the term

The design emphasized simplicity, accessibility, and user-friendly navigation to support blended learning environments.

3. Development

During the development phase, the website was programmed and populated with wetland-related vocabulary entries. The research team collected and compiled specialized terminology relevant to wetlands in South Kalimantan, including ecological, agricultural, and environmental terms.

Each entry was carefully reviewed to ensure accuracy of translation, clarity of definition, and contextual relevance. The development process resulted in a functional prototype of a web-based wetlands dictionary ready for validation and testing.

4. Validation

The validation stage involved internal and external evaluation of the product's content and technical functionality. The research team reviewed the accuracy of translations, clarity of definitions, and appropriateness of example sentences. The external validator also reviewed the content, database system, mobile responsiveness worked properly and the features of the web-based dictionary. Revisions were made to improve wording clarity, correct minor translation inconsistencies, and enhance interface usability before field testing.

5. Testing

The product was tested in three higher education institutions in South Kalimantan:

a) STKIP Islam Sabilal Muhtadin
b) Universitas Islam Negeri Antasari
c) Universitas Lambung Mangkurat

The testing phase involved a total of 35 responses. Purposive sampling was used to choose participants who matched the target user profile—students enrolled in English courses linked to wetlands or environmental studies. This sampling strategy ensured that the participants' baseline knowledge and learning needs were relevant to the produced product, justifying the small sample size characteristic of R&D trials. A 23-item Likert-scale questionnaire was used to collect data, which assessed accessibility, usability, content clarity, feature efficacy, technical performance, and learning impact.

The testing results indicated predominantly positive responses across all evaluation indicators, particularly in accessibility, mobile compatibility, search effectiveness, and learning benefits.

6. Revision

Based on feedback from respondents during the testing phase, several improvements were made. Minor revisions included:

1) Refining definitions for greater clarity
2) Improving example sentence structure
3) Enhancing search responsiveness
4) Adjusting interface layout for better mobile optimization
5) Improving the save-word feature usability

These revisions ensured that the final product better met user needs and improved overall functionality.

7. Final Product

The final product is a fully functional web-based English–Indonesian wetlands dictionary accessible online. The dictionary supports the English for Wetlands course and can also be used by the broader community requiring translation of wetland-related terminology.

The final version demonstrates:

a) High accessibility across devices
b) User-friendly interface
c) Contextually relevant vocabulary
d) Reliable technical performance
e) Positive user evaluation results

As a result, the product fulfills the objective of supporting the dissemination of English for Wetlands in South Kalimantan and aligns with the wetlands-based academic orientation of Universitas Lambung Mangkurat. R&D makes sure that educational items are thoroughly assessed before being put into use.

RESULT AND DISCUSSION

Overall Statistical Summary

To strengthen analysis, the responses were grouped into positive (Agree + Strongly Agree), neutral, and negative (Disagree + Strongly Disagree).

No	Evaluated Aspect	Positive n (%)	Neutral (%)	Negative n (%)
1	Ease of accessing the dictionary	35 (100%)	0 (0%)	0 (0%)
2	Website interface is attractive and easy to use	29 (82.9%)	6 (17.1%)	0 (0%)
3	Effectiveness of search feature	29 (82.9%)	5 (14.3%)	0 (0%)
4	Clarity of word definitions	26 (74.3%)	7 (20.0%)	0 (0%)
5	Availability of synonym and antonym features	15 (42.9%)	12 (34.3%)	3 (8.6%)
6	Clarity and usefulness of example sentences	26 (74.3%)	6 (17.1%)	0 (0%)
7	Explanation provided for each word	22 (62.9%)	8 (22.9%)	5 (14.3%)
8	Variety of word types (noun, verb, adjective)	21 (60.0%)	9 (25.7%)	5 (14.3%)
9	Updated vocabulary data	27 (77.1%)	7 (20.0%)	1 (2.9%)
10	Speed of website access	24 (68.6%)	8 (22.9%)	3 (8.6%)
11	Definitions covering various context	25 (71.4%)	9 (25.7%)	1 (2.9%)
12	Ease of use for beginners	31 (88.6%)	2 (5.7%)	2 (5.7%)
13	Accessibility on mobile devices	30 (85.7%)	5 (14.3%)	0 (0%)
14	Word-saving feature	22 (62.9%)	8 (22.9%)	5 (14.3%)
15	Search feature available from the homepage	31 (88.6%)	4 (11.4%)	0 (0%)
16	Helps improve English language ability	33 (94.3%)	2 (5.7%)	0 (0%)
17	Detailed explanation of searched words	21 (60.0%)	9 (25.7%)	5 (14.3%)
18	Variation in spelling or pronunciation	21 (60.0%)	9 (25.7%)	5 (14.3%)
19	Website experiences technical problems	10 (28.6%)	9 (25.7%)	16 (45.7%)
20	Helps users understand difficult words	27 (77.1%)	7 (20.0%)	1 (2.9%)
21	Provides sufficient information on technical terms	18 (51.4%)	8 (22.9%)	9 (25.7%)
22	Features are not confusing	23 (65.7%)	9 (25.7%)	3 (8.6%)
23	Recommended for other learners	32 (91.4%)	1 (2.9%)	2 (5.7%)

Table 1. User Evaluation Results (N = 35)

No	Improvement Aspect	Related Items	Positive (%)	Neutral (%)	Negative (%)	Key Issue Identified
1	Refining definitions for greater clarity	4, 7, 11, 17, 21	63.7%	22.3%	11.4%	Definitions lack depth and completeness, especially for technical terms
2	Improving example sentence structure	6	74.3%	17.1%	0%	Example sentences need better contextual relevance
3	Enhancing search responsiveness	3, 10, 15, 19	67.2%	18.6%	13.2%	Issues with speed and technical stability
4	Adjusting interface layout for mobile optimization	2, 12, 13, 22	80.7%	17.9%	3.6%	Some navigation and layout clarity issues remain
5	Improving save-word feature usability	14	62.9%	22.9%	14.3%	Feature is not fully intuitive or optimized

Table 2. Breakdown of Evaluation Results Based on Improvement Aspects

Based on the evaluation results of the developed web-based wetland English dictionary, respondents responded generally positively. Most participants found the system accessible and user-friendly. A total of 35 or all respondents (100%) provided a positive response to the accessibility of the dictionary, meaning that they feel this website can be accessed with ease by its users. Similarly, a majority of the respondents (82.9%) responded that the website interface is appealing and user-friendly whereas (17.1%) remained neutral to agreeable responses.

As for functionality, the search was rated well by most participants. While they both find the search feature to be efficient in helping them access the required vocabulary promptly, with 82.9% agreement, Likewise, a majority of the respondents (74.3%) rated positively on whether word definitions in general are clear, indicating that explanations in the dictionary are largely comprehensible to users.

In addition, the availability of example sentences was considered useful as 74.3% voted in favour that Example sentences are clear and help understand the usage of words. The dictionary also offered explanations on each entry, which was positively received by 62.9% of participants. Also, 60% of respondents rated the inclusion of different types of words, including nouns, verbs and adjectives positively.

Another important aspect that has been emphasized according to the findings is the usefulness of the dictionary for the learning of English. A vast majority of the respondents, i.e., 94.3%, agreed that the web-based dictionary is helpful for the improvement of the English language skills of the respondents, especially for the comprehension of technical vocabulary

regarding wetland-related topics. Moreover, 88.6% of the respondents agreed that the dictionary is easy for beginners to use, which indicates that the dictionary is accessible for users with limited English knowledge.

The ease of access to the dictionary via mobile devices was highly appreciated, as the responses from 85.7% of the respondents were positive. Furthermore, 88.6% of the respondents agreed that the search facility available on the homepage helps users locate the word directly.

While the overall feedback was positive, some aspects received more mixed feedback. For example, the synonym and antonym feature received 42.9% positive feedback and 34.3% neutral feedback, indicating that this feature still has room for improvement. Similarly, the feature providing detailed explanations and pronunciation variations received moderate positive feedback ranging from 60%.

In terms of technical performance, it seems that the majority of respondents do not perceive any technical issues with the website. For example, 54.3% of respondents gave positive feedback to the question of whether they think the website often experiences technical issues, indicating a good technical performance of the system.

Based on the overall results, it is clear that the developed web-based English dictionary for wetland users is well received by users. Most users agreed that the English dictionary is easily accessible and useful for learning English words related to wetland studies. It is clear that the developed product is viable to be applied as a learning tool in the English for Wetlands course.

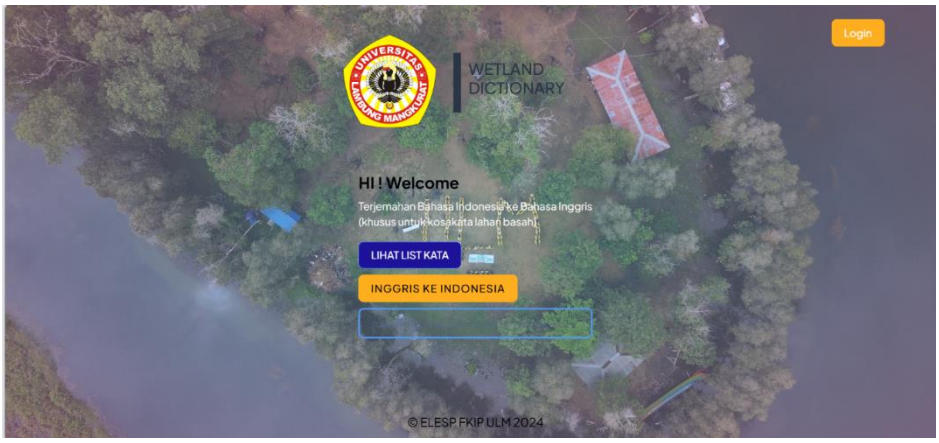

Image 1. Wetland Dictionary

Discussion

Accessibility and Interface Design

The results show that accessibility (88%) and interface design (83%) received high positive responses from participants. These findings suggest that the website was successfully designed with user-centered principles, allowing students to navigate and access information easily. In digital learning environments, usability and accessibility are essential factors that influence the effectiveness of educational technologies(Mirza, 2021). If a system is difficult to access or complicated to use, students are less likely to engage with it regularly.

In addition, the high accessibility score shows that students' autonomous learning processes are successfully supported by the incorporation of basic navigation features, search tools, and mobile compatibility. In the context of blended learning, where students regularly use digital resources outside of class, this is especially crucial. As noted by Nasrullah et al. (2023), accessible digital platforms can significantly enhance the learning experience by allowing students to interact with educational resources anytime and anywhere. Additionally, the appealing interface design encourages students to be motivated and open to exploring educational resources. Cognitive load during vocabulary searches is lessened by visual clarity, user-friendly menus, and well-organized vocabulary entries(Timileyin, 2024).

Furthermore, the favorable feedback regarding interface design suggests that when creating language-learning resources, technological considerations should not be disregarded. How well students interact with digital resources can be greatly impacted by a well-designed interface.

Content Quality and Vocabulary Contextualization

Another important consideration when assessing digital learning resources is content quality. In this study, 74% of respondents said that definitions and example sentences were clear, meaning that most users thought the explanations were clear and beneficial. This result validates the core tenet of ESP training, which highlights the significance of contextualized vocabulary acquisition.

Specialized dictionaries must offer definitions that represent domain-specific meanings, in contrast to general English dictionaries. Words related to wetlands may have ecological, environmental, or agricultural connotations that are rarely clarified in traditional dictionaries. As a result, giving students contextual definitions and sample sentences makes it easier for them to comprehend how these terms are used in actual communication situations.

The researcher believes that using example sentences is crucial for teaching. Understanding definitions is only one aspect of vocabulary knowledge; students also need to comprehend how words fit into sentences and discourse (Liu & Shaw, 2001). Learners can observe how specialized terminology is used in actual wetlands ecosystem contexts by looking at example sentences. This method is consistent with ESP pedagogy, which promotes language acquisition through real-world situations as opposed to memorization of discrete words. Nonetheless, the comparatively higher neutral responses (20% for definitions and 17% for example sentences) imply that certain content elements might still need to be improved. The researcher believes that in order to improve conceptual understanding, future revisions should concentrate on enhancing contextual explanations and offering more examples.

Feature Evaluation and User Interaction

The assessment of the dictionary's features, such as the tools for finding both synonyms and antonyms, as well as the search tools, also showed positive results. While the results concerning the assessment of the tools for finding both synonyms and antonyms were slightly less positive compared to the other results, the overall assessment was still positive.

This could be a sign that students mainly use the dictionary to find the definitions or translations of the words. This could mean that the students are not interested in finding the semantic relationships between the words. From the point of view of the researcher, this could

be a sign that students mainly use the dictionary as a quick reference tool rather than a learning tool (Liu & Shaw, 2001).

However, the presence of other words like synonyms and antonyms can still play an important role because they can gradually motivate students to learn more vocabulary. Through the exploration of related words, students may develop more sophisticated vocabulary and improve their academic writing skills.

Learning Impact and Vocabulary Development

One of the most important findings of the study is the positive feedback concerning the learning benefits of the dictionary. About 94% of the respondents agreed on the positive role of the dictionary in improving English learning, and the majority of the respondents strongly agreed on the positive role of the dictionary concerning the understanding of complex words concerning the wetlands.

The findings indicate that the developed dictionary successfully fulfills the learning objective concerning the vocabulary learning of the English for Wetlands course, and vocabulary learning is considered one of the basic learning components concerning language proficiency. It is not possible to understand any text, express ideas, and participate in academic discussions without the basic vocabulary learning component (Kazazoglu, 2025).

From the point of view of the researcher, the positive impact of learning that was identified in this research implies that specialized digital resources can play a critical role in the ESP learning environment. For example, when students encounter unfamiliar technical terms while reading learning materials, having access to a specialized dictionary can facilitate the learning process. This way, students can focus their attention on understanding the content rather than spending too much time on understanding individual words.

Moreover, the presence of environmental terminology can also contribute to the development of environmental literacy. By learning English vocabulary related to wetlands ecosystems, students can simultaneously develop their understanding of environmental issues in the region. From the point of view of the researcher, this kind of learning can be viewed as a valuable contribution to interdisciplinary learning(Kazazoglu, 2025).

Technical Reliability

Another significant factor in the case of digital educational tools is the technical reliability of the tools. The study findings have revealed that the majority of the respondents disagreed with the statements that indicated the website often faces technical disturbances. This is an indicative sign of the technical reliability of the website.

From the perspective of the researcher, the study findings have revealed that the collaboration with the IT development team has been successful in creating a technically reliable website. Technical reliability is significant in the case of educational tools since the educational content may lose its effectiveness in the long run due to technical disturbances (Kazemi & Narafshan, 2014).

Contribution to ESP and Digital Learning

Overall, the findings of the research indicate that the incorporation of localized environmental content into digital ESP tools greatly contributes to the level of learners' engagement. With the dictionary's emphasis on the terminology of the wetlands of South Kalimantan, the dictionary

creates a connection between the language learning process and the learners' environmental context.

In comparison to the previous research on the effectiveness of wetlands-based learning materials (Arini & Fadilla, 2021; Listia et al., 2023), the research contributes to the literature by specifically examining the effectiveness of a dictionary as a learning resource rather than a reading material or a teaching module. The creation of a dictionary as a learning tool is an innovative idea for ESP vocabulary learning.

From the researcher's perspective, the originality of this research is seen in its attempt to bring three components such as: environmental context, ESP pedagogy, and technology. It is a learning tool not only relevant linguistically but also environmentally.

In addition, the study also supports the theory of blended learning, which stresses the significance of technology in a flexible learning system (Hadiyanto et al., 2022). The web-based approach enables students to access learning resources anywhere and anytime, thus promoting independent learning (Nasrullah & Rosalina, 2023).

Researcher's Reflection

Based on the findings, the researcher believes that the development of specialized digital dictionaries has strong potential to enhance ESP learning in higher education. However, several improvements can be considered in future development stages, such as expanding the vocabulary database, integrating pronunciation audio features, and incorporating interactive learning tools.

Additionally, future research could investigate the effectiveness of the dictionary through experimental designs that measure vocabulary acquisition before and after its use. Such studies would provide stronger empirical evidence regarding the educational impact of digital lexical resources.

CONCLUSION

In order to support the dissemination of English for Wetlands in South Kalimantan, the research successfully developed a web-based English-Indonesian dictionary for wetlands. The findings of this study have several significant implications for the field of English for Specific Purposes (ESP). First, the high level of accessibility and usability suggests that web-based lexical resources can effectively promote independent learning in technologically advanced settings. Second, the use of domain-specific terminology emphasizes the significance of creating specialized learning materials that address the linguistic requirements of specific subjects, such as wetlands studies. Third, the favorable impact on student language acquisition shows that contextualized lexical support can improve learners' comprehension and productive use of English in academic and professional settings. Finally, the incorporation of the generated dictionary into blended learning environments demonstrates its ability to bridge digital technology with ESP pedagogy, particularly by facilitating locally relevant content.

In general, the innovation contributes to the development of the education of wetlands, as well as the environmental academic perspective promoted by Universitas Lambung Mangkurat. For the future research, the following improvements can be made:

1. Conducting experiments to assess the development of vocabulary among the learners

2. Adding audio features to the dictionary to improve pronunciation
3. Expanding the terminology base Adding the AI search feature to the dictionary

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