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THE DEVELOPMENT OF AN ACEHNESE-INDONESIAN DICTIONARY FOR VOCATIONAL FIELDS BASED ON ANDROID: A NEEDS ANALYSIS STUDY

[1]RAHMAD NUTHIHAR, [1]HILMA ERLIANA,[2]WAHDANIAH, [2]ILHAM JAYA, [3]DEWI RATNASARI, [4]ZULFAHMIRDA MATONDANG, [5]RAMLI, [1]INTAN WULAN SARI
[1]Akademi Komunitas Negeri Aceh Barat, Meulaboh, Aceh, Indonesia [2]Politenik Negeri Lhokseumawe, Lhokseumawe, Indonesia [3]UniversitasPadjadjaran, Jatinangor, Indonesia [4]Balai Bahasa Provinsi Aceh, Banda Aceh, Indonesia [5]Universitas Syiah Kuala, Banda Aceh, Indonesia Email: rahmad.nuthihar@aknacehbarat.ac.id

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Abstract

This study analyzes the needs of an Android-based Acehnese-Indonesian dictionary for the vocational field. The needs analysis ensures alignment with user expectations. The instrument is tested for validity and reliability, with the product-moment correlation showing an r-value higher than the table value, and Cronbach's alpha exceeding 0.6, confirming its validity and reliability. Data were collected using purposive sampling through questionnaires distributed to 100 Acehnese speakers in West Aceh, Greater Aceh, North Aceh, and Lhokseumawe. The results showed that 87% supported the development of the dictionary, 87% wanted features such as images, pronunciation, and IPA writing, 84% considered audio important, and 79% preferred technical vocabulary, category-based search, and offline access. The novelty of this study lies in its user-driven approach, integrating interactive features that are essential for vocabulary acquisition. Unlike conventional bilingual dictionaries, this study focuses on vocational terminology, preserving the Acehnese language while enhancing its practical use. High user demand and a rigorous validation process ensure that the developed instruments accurately capture user needs, laying a solid foundation for further development.

Keywords: Acehnese language, Phonology, Android dictionary, Lexicography, Vocational

INTRODUCTION

Regional languages, particularly Acehnese, have played a significant role in shaping the vocabulary of the Indonesian language (Budiwiyanto, 2022, 2023). The integration of Acehnese vocabulary into the *Kamus Besar Bahasa Indonesia* (KBBI) has been an ongoing process, with 143 Acehnese-origin words recorded from the first to the sixth edition(Nuthihar & Wahdaniah, 2024). This number is expected to increase with contributions from the Aceh Provincial Language Office and public submissions through the KBBI website(Rusli et al., 2023). However, despite this contribution, challenges remain, particularly in standardizing pronunciation and the absence of phonetic transcription in digital lexicographical tools. These limitations hinder language learners and researchers who require precise pronunciation guidance for accurate linguistic comprehension.

Existing Acehnese-Indonesian dictionaries are predominantly available in printed form, with no comprehensive digital versions accessible to the public. This limitation is problematic in the context of modern language preservation and accessibility. While technological advancements have facilitated the development of digital dictionaries for various regional languages, Acehnese remains underserved in this regard (Amelia et al.,

2024; Gunawan &Amalia, 2017). Even widely used translation tools such as Google Translate provide limited support for Acehnese, as they lack phonetic transcription and pronunciation features, diminishing their effectiveness as language learning tools (Saefullah, 2023; Wahyuningtyas et al., 2021). The absence of these features suggests a critical gap in digital lexicography, particularly in the development of phonetic transcription tools for regional languages like Acehnese.

Phonetics plays a crucial role in the integration of regional languages into national lexicons. Acehnese possesses distinct phonetic characteristics, including unique vowels, consonants, and diphthongs that require precise representation to ensure proper pronunciation (Aziz et al., 2022, 2023). Its orthographic structure, which includes double consonants absent in the *Ejaan Yang Disempurnakan* (EYD), presents challenges in digital transcription (Masykar et al., 2022; Yusuf et al., 2021). These linguistic complexities contribute to the limited recognition of Acehnese words in national dictionaries and reinforce the need for phonetic transcription and pronunciation support in digital lexicographical tools (Akmal et al., 2023).

Despite previous efforts to develop Acehnese-Indonesian dictionaries, existing works have primarily focused on specific domains such as maritime and cultural terminology (Matondang et al., 2021, 2022). While these dictionaries provide valuable insights into Acehnese orthography, they do not incorporate phonetic transcriptions, making them less effective for learners unfamiliar with the language. Standardized phonetic transcription, particularly through the integration of the International Phonetic Alphabet (IPA), could significantly improve pronunciation accuracy and learning outcomes (Cruttenden, 2021; Riza & Kawakib, 2021). Furthermore, the inclusion of IPA transcription in digital lexicographical tools could facilitate the development of pronunciation features in widely used translation platforms, such as Google Translate, thereby expanding the accessibility and usability of the Acehnese language(Alam, 2020). The absence of a digital Acehnese–Indonesian dictionary not only limits accessibility but also presents a challenge to language preservation. A digital dictionary equipped with phonetic transcription and pronunciation features would be highly beneficial for students, researchers, and the general public(Fouz-González, 2017; Rahman et al., 2024). Additionally, incorporating visual representations of culturally significant objects associated with Acehnese words could enhance comprehension, particularly for learners unfamiliar with the language's cultural context.

Digitization initiatives for regional languages worldwide have proven effective in language preservation programs (Lackaff & Moner, 2016; Pine & Turin, 2017). Digital dictionaries that integrate phonetic transcriptions have been successfully implemented in endangered language revitalization programs, ensuring broader accessibility and pronunciation accuracy. The use of artificial intelligence (AI) in language learning applications has been shown to improve oral communication skills and pronunciation accuracy, allowing for adaptive learning and automatic feedback, which could be incorporated into the development of an Acehnese–Indonesian digital dictionary(Shofi & Ainiyah, 2024).

Moreover, research on AI-driven pedagogical and cybergogical transformations has demonstrated that integrating AI into education can enhance critical thinking, creativity, and problem-solving skills. AI enables personalized learning by tailoring instructional materials to individual student needs, improving engagement through interactive learning environments, and automating assessment processes for more efficient evaluations. Additionally, AI-driven digital education can facilitate access to authentic language materials, such as news articles and audio recordings, which align with learners' competence levels. However, successful implementation requires educators to enhance their digital competencies

to integrate AI effectively and guide students in responsible technology use (Efrizal et al., 2024). By adopting similar technological advancements, the proposed Acehnese–Indonesian digital dictionary could contribute not only to regional language preservation but also to the broader linguistic landscape of Indonesia.

This study aims to conduct a comprehensive needs analysis for the development of an Android-based Acehnese-Indonesian Vocational Dictionary. It identifies critical gaps in existing dictionaries, particularly the lack of phonetic transcription and pronunciation features, and examines how integrating these elements can improve accessibility and usability. By surveying Acehnese speakersboth native and non-nativethis research will inform the design of a digital dictionary that is more inclusive and functional. The findings will contribute to the development of a more comprehensive and user-friendly digital lexicographical tool, ensuring that the Acehnese language remains relevant and accessible in contemporary linguistic and educational contexts. Furthermore, this initiative has the potential to influence future linguistic research and digital language documentation efforts, reinforcing the position of Acehnese within the broader Indonesian lexicon.

METHOD

Respondents

Data collection was carried out using purposive sampling, where the sample is selected based on the researcher's judgment of a population (Guarte & Barrios, 2006). The considerations reviewed include the characteristics and traits of the population (Sugiyono, 2012). The population in this study is the Acehnese-speaking community. This is because there are various regional languages in the province of Aceh, such as Jamee and Kluet in South Aceh and Southwest Aceh, and Gayo in Central Aceh and Bener Meriah (Rizki & Junaidi, 2020; Wildan, 2010). In this study, the selected population is the community that predominantly speaks Acehnese, commonly found in the regions of Lhokseumawe, North Aceh, Greater Aceh, and West Aceh. The number of respondents was calculated using the Slovin formula (Puspitawati & Herawati, 2018):

n =N/((1+Ne^2))..... (1)

Where:

n = Number of research samples

N = Total population

e = Tolerable margin of error

Based on the population data from the Aceh Provincial Statistics Agency in 2023, the total population of the regions of Lhokseumawe, North Aceh, Greater Aceh, and West Aceh is as follows:

Table 1. The population of people who use the common Acehnese language

Kabupaten	**JumlahPenduduk**
Great Aceh	435.298
North Aceh	624.582
Lhokseumawe	196.067
West Aceh	205.108
Total	**1.461.685**

Using the formula:

$$n = \frac{N}{(1+Ne^2)} = \frac{1.461.685}{(1+(1.461.685x10\%^2)} = 99{,}993 \approx 100$$

After determining a sample size of 100 respondents, the sample was then divided proportionally based on the population of each region. The proportional sample calculation for each region is as follows:

Table 2. Recapitulation of the number of respondents

Kabupaten	**JumlahResponden**
Great Aceh	30
North Aceh	43
Lhokseumawe	13
West Aceh	14
Total	**100**

Variable Analysis

The questionnaire results were analyzed using the Likert Scale method (James & Lee, 2011). The Likert Scale is a method used to measure respondents' perceptions, opinions, or views of an event based on predetermined statements (Harpe, 2015; Rahardja et al., 2018). Data processing was conducted based on the responses filled in by the respondents through an online Google Form. The scale calculation for each response can be seen in the following table.

Table 3. Scale Value Calculation

Skala Jawaban	Nilai Skala
STS (Strongly Disagree)	1
TS (Disagree)	2
KS (Neutral)	3
S (Agree)	4
SS (Strongly Agree)	5

Before distributing the questionnaire to all respondents, validity and reliability tests were conducted. The validity test is used to determine how well the provided questions measure the capability of the question instrument. Meanwhile, the reliability test assesses the consistency, precision, or accuracy of the instrument and the level of correctness. Reliability is considered dependable if the Cronbach Alpha (α) value is at a coefficient of 0.6. Using the Cronbach Alpha (α) formula, if the data reliability degree is ≥ 0.60, the value is considered to provide a reliable indication of the questionnaire used. Once the tests are conducted and meet the necessary criteria, the questionnaire distribution can proceed (Santoso, 2008).

Questionnaire Design

The questionnaire design consists of five aspects, which include (1) General Needs for the Dictionary, (2) Image Needs in the Dictionary, (3) IPA (International Phonetic Alphabet) Writing Needs, (4) Pronunciation Needs in the Dictionary, and (5) Specific Vocational Needs in the Dictionary.

Table 4. Questionnaire Instrument Design

Variable	**Item**	**Number of Questions**
General needs for the Dictionary	X_1	6
Image Needs in the Dictionary	X_2	5
IPA (International Phonetic Alphabet) Writing Needs	X_3	5
Pronunciation Needs in the Dictionary	X_4	5
Specific Vocational Needs in the Dictionary	X_5	9

FINDINGS

Instrument Testing

The tested data consists of respondents' answers regarding the development of the Acehnese–Indonesian dictionary specifically for vocational fields, with additional features such as images, phonetic writing (IPA), and pronunciation. The data testing performed on respondents' answers includes validity and reliability testing.

Validity and Reliability Tests

The research instruments in the data analysis process were tested using validity and reliability tests. The validity test measures how well the measuring tool used can assess the existing variables to evaluate the instrument's capability. Meanwhile, the reliability test is used to evaluate the reliability, accuracy, precision, or consistency of an instrument. The following table outlines the question indicators used in the research.

Table 5. Question Indicators

Variabel	Item	Jumlah Pertanyaan
General Needs for the Dictionary	X_1	6
Image Needs in the Dictionary	X_2	5
IPA (International Phonetic Alphabet) Writing Needs	X_3	5
Pronunciation Needs in the Dictionary	X_4	5
Specific Vocational Needs in the Dictionary	X_5	9

Validity Test

The validity test is conducted to determine the level of validity and the indicators used as measuring tools for the variables. Calculations are made by correlating each item score with the total score using the Product Moment correlation technique. If the correlation coefficient (r) value is greater than the table value (r_{table}), the questionnaire item is declared valid and can be used as a data collection tool. With a sample size (n) = 92 and a significance level (α) = 0.05, it is known that the table value (r_{table}) = 0.205. The results of the calculation (r) obtained from SPSS output are shown in the following table:

Table 6. Validity Test Results

Variable	Item	Table Value (0,05)	Calculated Value
General Needs for the Dictionary	$X_{1.1}$	0,205	0,626
	$X_{1.2}$	0,205	0,597
	$X_{1.3}$	0,205	0,351
	$X_{1.4}$	0,205	0,615
	$X_{1.5}$	0,205	0,626
	$X_{1.6}$	0,205	0,609
Image Needs in the Dictionary	$X_{2.1}$	0,205	0,555
	$X_{2.2}$	0,205	0,634
	$X_{2.3}$	0,205	0,513
	$X_{2.4}$	0,205	0,599
	$X_{2.5}$	0,205	0,628
IPA (International Phonetic Alphabet) Writing Needs	$X_{3.1}$	0,205	0,646
	$X_{3.2}$	0,205	0,612
	$X_{3.3}$	0,205	0,571
	$X_{3.4}$	0,205	0,698
	$X_{3.5}$	0,205	0,607
Pronunciation Needs in the Dictionary	$X_{4.1}$	0,205	0,720
	$X_{4.2}$	0,205	0,597
	$X_{4.3}$	0,205	0,541
	$X_{4.4}$	0,205	0,638
	$X_{4.5}$	0,205	0,621
	$X_{5.1}$	0,205	0,553
	$X_{5.2}$	0,205	0,556

Specific Vocational Needs in the Dictionary	$X_{5.3}$	0,205	0,783
	$X_{5.4}$	0,205	0,782
	$X_{5.5}$	0,205	0,698
	$X_{5.6}$	0,205	0,787
	$X_{5.7}$	0,205	0,670
	$X_{5.8}$	0,205	0,752
	$X_{5.9}$	0,205	0,752

The results of the Product Moment correlation calculation in the table above show that all the items are valid. The correlation between respondents' answers for each questionnaire item or indicator with the total score produced significant results, indicated by the calculated (r) values being greater than the table value (r_{table}). Therefore, the instrument can be used as a data collection tool for this study.

Reliability Test

The reliability test is used to determine whether the instrument or indicator used is reliable or dependable as a variable measuring tool. If the Cronbach's alpha (α) value for a variable is greater than 0.6, the indicator used by that variable is considered reliable. If the Cronbach's alpha (α) value is less than 0.6, the indicator is considered unreliable. The results of the reliability test using SPSS output are presented in the following table:

Table 7. Reliability Test Results

No.	Variabel	*Cronbach's Alpha*	Reliability
1.	General Needs for the Dictionary	0,979	Reliable
2.	Image Needs in the Dictionary	0,978	Reliable
3.	IPA (International Phonetic Alphabet) Writing Needs	0,978	Reliable
4.	Pronunciation Needs in the Dictionary	0,979	Reliable
5.	Specific Vocational Needs	0,979	Reliable

The results of the reliability test in the table above show that Cronbach's alpha values for all variables are greater than 0.6. Therefore, it can be concluded that the indicators are reliable and can be used as a variable measuring tool.

DISCUSSION

The Analysis on the Development of the Aceh-Indonesian Dictionary

General Need for a Dictionary

The discussion on the general need for an Aceh-Indonesian dictionary in the vocational field covers six questions filled out by the respondents. These questions aim to represent the general needs of a dictionary. Below is a breakdown of each question:

Table 8. Recapitulation of Percentage Indicators of Questions Regarding General Dictionary Needs

No.	Indicator	SS (%)	S (%)	N (%)	TS (%)	STS (%)
1	I feel that an Aceh-Indonesian dictionary app for the vocational field in Android form is very much needed.	48	35	14	0	3
2	The Android-based Aceh-Indonesian dictionary app will ease the search for vocational vocabulary.	50	37	10	1	2
3	The current Acehnese dictionary does not meet my needs in the vocational field.	18	31	42	6	3
4	I need an Acehnese dictionary with modern features such as images, pronunciation, and IPA transcription.	57	30	8	3	2
5	The Android-based dictionary app will be easier to access compared to a hardcopy	54	33	10	2	1

No.	Indicator	SS (%)	S (%)	N (%)	TS (%)	STS (%)
	dictionary or book.					
6	The vocabulary search feature in the dictionary app is very important for me to find words quickly.	54	35	8	1	2

Based on the table above, the majority of respondents stated that an Android-based Aceh-Indonesian dictionary application is highly needed in the vocational field. This is evident from 48% of respondents who strongly agree (SS) and 35% who agree (S) about its necessity. Only a small portion (3%) disagreed (STS). Furthermore, 50% strongly agree that the Android-based application will make searching for vocational vocabulary easier, followed by 37% who agree. This indicates that most respondents believe this app will increase accessibility to relevant vocabulary.

In contrast, 42% of respondents felt neutral about the existing Acehnese dictionaries meeting their vocational needs, while 31% strongly disagreed that they were sufficient. Only 18% strongly agreed with the statement, suggesting an urgent need for updates. Regarding modern features like images, pronunciation, and IPA transcription, 57% strongly agreed that these features are important, with 30% agreeing, showing a high demand for innovation in digital dictionaries to provide a more interactive learning experience.

Additionally, the majority of respondents (54%) strongly agreed that the Android-based dictionary app would be easier to access compared to physical dictionaries, with 33% also agreeing. Only 6% disagreed or strongly disagreed, indicating a strong desire for digitalization. Lastly, 54% strongly agreed that a quick vocabulary search feature is crucial, followed by 35% agreeing, highlighting that speed in finding words is highly valued by users. Overall, these survey results indicate strong support from respondents for the development of an Android-based Aceh-Indonesian dictionary tailored to vocational needs, with modern features that facilitate efficient vocabulary searching.

These findings strongly indicate that an Android-based Aceh-Indonesian dictionary for vocational purposes is highly needed. A significant majority of respondents (83%) agree or strongly agree on its necessity, highlighting the demand for an accessible and efficient tool for searching vocational vocabulary. Furthermore, 87% of respondents emphasize the importance of modern features such as images, pronunciation, and IPA transcription, showing a preference for an interactive and user-friendly digital dictionary. However, while most respondents recognize the limitations of existing Acehnese dictionaries, 42% remain neutral regarding their sufficiency. This suggests that while improvements are necessary, some users may still find traditional dictionaries useful.

These findings align with previous research on digital lexicography, which highlights the increasing demand for mobile-based dictionaries with interactive features. Prior studies have also emphasized that digitalization enhances accessibility and usability, particularly in specialized fields such as vocational education. Further studies could explore user engagement with the app, evaluating its effectiveness in improving vocabulary acquisition in vocational settings. Additionally, integrating AI-driven search features and speech recognition could enhance the dictionary's functionality.

This study confirms a strong demand for a digital Aceh-Indonesian dictionary tailored to vocational needs. Future innovations should focus on enhancing accessibility, efficiency, and interactivity to ensure the tool meets the evolving linguistic demands of vocational learners.

Need for Images in the Dictionary (X2)

The need for images in a dictionary helps users understand nouns more precisely, especially those without an Acehnese language background. The results of the questionnaire related to the need for images in the dictionary are as follows:

Table 9. Recapitulation of Percentage Indicators Regarding the Need for Images in the Dictionary

No.	Indicator	SS (%)	S (%)	N (%)	TS (%)	STS (%)
1	Including images in the dictionary will help me understand Acehnese vocabulary in the vocational field.	51	34	13	1	1
2	Including images of tools, materials, or work techniques in the vocational field is essential for better understanding.	53	33	13	0	1
3	I find it easier to understand technical words when accompanied by explanatory images.	46	38	13	1	2
4	Types of images, such as photos or illustrations, will help me learn vocational terminology.	50	39	9	2	2
5	Images in the application will help me distinguish between similar concepts or tools with different functions.	56	33	9	1	1

The table presents key indicators regarding respondents' perceptions of image use in dictionaries and applications for understanding concepts in Acehnese and vocational fields. The findings indicate strong support for visual integration in language learning. First, 51% of respondents strongly agree (SS) and 34% agree (S) that images help them understand Acehnese vocational vocabulary, reinforcing the value of visuals in facilitating comprehension. Similarly, 53% strongly agree and 33% agree that including images of natural objects, materials, or work techniques enhances understanding, emphasizing the importance of concrete visuals in vocational education.

Additionally, 46% strongly agree and 38% agree that technical words become more comprehensible when accompanied by explanatory images, highlighting a preference for combining text and visuals in learning technical terminology. The role of different types of images, such as photos and illustrations, is also recognized, with 50% strongly agreeing and 39% agreeing that these formats aid in acquiring vocational terms. Moreover, 56% strongly agree and 33% agree that images help distinguish similar concepts or tools with different functions, demonstrating their effectiveness in clarifying nuanced differences.

While these findings support the integration of visuals, the neutral or disagreeing responses suggest that some learners may not rely on images as their primary learning tool. This aligns with previous studies in digital lexicography and vocational education, which emphasize that while visuals enhance comprehension, individual learning preferences vary.

Future research should explore how different image types influence learning outcomes across various vocational fields and how interactive features, such as augmented reality or AI-driven image recognition, could further enhance understanding. These findings underscore the necessity of incorporating visual aids in dictionaries and applications to optimize language and technical skill acquisition in vocational education.

The Need for IPA (International Phonetic Alphabet) Writing (X3)

Google Translate currently provides a translation feature from or into the Acehnese language. However, the pronunciation feature is not yet available on this platform. One of the reasons for the absence of the pronunciation feature is that Acehnese, especially for pronunciation, does not follow the International Phonetic Alphabet (IPA). The results of this study are as follows.

Table 10. Recapitulation of the Percentage of Question Indicators Regarding the Need for IPA (International Phonetic Alphabet) Writing

No.	Indicator	SS	S	N	TS	STS
		%	%	%	%	%
1	I need phonetic transcription (IPA) in the app to help with the pronunciation of difficult Acehnese words.	0	34	21	1	2
2	IPA writing will make it easier for me to pronounce technical words in the vocational field.	38	39	20	2	1
3	I feel IPA writing is very important for non-native speakers of Acehnese to understand the correct pronunciation.	50	36	11	2	1
4	I find IPA transcription helpful in the app for clarifying the pronunciation of words that differ from their original spelling.	40	44	14	1	1
5	I find it easier to understand IPA symbols and often use them when learning Acehnese.	36	38	23	2	1

The data indicate varied responses regarding the use of the International Phonetic Alphabet (IPA) in the Acehnese dictionary application. Notably, no respondents strongly agreed (0%) that phonetic transcription helps with the pronunciation of difficult Acehnese words, although 34% agreed, suggesting limited initial support for this feature.

In contrast, 38% strongly agreed and 39% agreed that IPA writing facilitates the pronunciation of technical terms, indicating a more positive perception in this specific context. Moreover, 50% strongly agreed and 36% agreed that IPA is crucial for non-native speakers in understanding correct pronunciation, reinforcing its role in aiding language acquisition. Similarly, 40% strongly agreed and 44% agreed that IPA helps clarify the pronunciation of words that differ from their original spelling. Additionally, 36% strongly agreed and 38% agreed that IPA symbols are easy to understand and commonly used in learning Acehnese, highlighting their perceived usefulness.

Despite some neutral or negative responses, the overall findings suggest that IPA integration is beneficial, particularly for non-native speakers and learners dealing with technical vocabulary. These results align with previous studies on phonetic transcription in digital dictionaries, which emphasize its role in pronunciation accuracy (Kurniawan et al, 2024). Future research should explore alternative phonetic representation methods or interactive features, such as audio pronunciation guides, to enhance user engagement. The findings underscore the importance of adapting phonetic transcription tools to meet diverse user needs in vocational language learning.

Pronunciation Needs in the Dictionary (X4)

The phonological system of the Acehnese language makes it difficult for dictionary users to pronounce Acehnese vocabulary accurately. This difficulty is particularly faced by non-native speakers of Acehnese. Given the diversity of Acehnese dialects, even native speakers sometimes mispronounce certain words. The research findings are as follows:

Table 11. Recapitulation of Percentage Indicators on Pronunciation Needs in the Dictionary

No.	Indicator	SS	S	N	TS	STS
		%	%	%	%	%
1	The audio pronunciation feature is very important to me in learning Acehnese for vocational purposes.	48	36	14	0	2
2	I often struggle to understand how to pronounce technical words in Acehnese, so an audio feature would be very helpful.	44	37	16	0	3
3	I find it easier to learn vocabulary when I can hear the correct pronunciation directly from the app.	42	38	17	1	2

No.	Indicator	SS	S	N	TS	STS
4	I need an Acehnese dictionary with modern features such as images, pronunciation, and IPA transcription.	42	38	15	3	2
5	I need to hear the pronunciation of certain words repeatedly to remember them better.	47	34	18	0	1

The survey results in Table 11 highlight the strong demand for audio pronunciation features in the Acehnese dictionary app, particularly in vocational contexts. A majority of respondents (48% strongly agreed, 36% agreed) emphasized the importance of this feature, with only 2% disagreeing. This indicates a widespread need for audio support in learning Acehnese vocabulary.

Additionally, 44% of respondents strongly agreed and 37% agreed that they often struggle with the pronunciation of technical words, reinforcing the necessity of an audio feature. Furthermore, 42% strongly agreed and 38% agreed that hearing correct pronunciation directly from the app would enhance their learning experience, with minimal disagreement (1%). The demand for a more interactive dictionary is also evident, as 42% strongly agreed and 38% agreed that modern features such as images, pronunciation, and IPA transcription are essential. Similarly, 47% strongly agreed and 34% agreed that an audio repetition feature would help them retain vocabulary more effectively.

These findings align with previous studies on language learning tools, which emphasize the role of auditory input in improving pronunciation and retention (Hakim et al, 2018). Given the strong user preference for these features, future research could explore integrating AI-based pronunciation feedback or personalized learning pathways to further enhance the effectiveness of the dictionary. Overall, the results underscore the importance of incorporating audio features to support Acehnese language acquisition, particularly in vocational education, where accurate pronunciation of technical terms is crucial.

Vocational-Specific Needs in the Dictionary (X5)

Vocabulary in each regional language has unique terms that may be absorbed into the Indonesian language. In Indonesian, vocational terms consist of 38 categories. All of these can be classified under vocational fields. In particular, Acehnese dictionaries that have been published so far do not include specific labels for vocational fields in Acehnese. Classification of vocational labels in Acehnese is essential for users to know the reference field of a given word.

Table 12. Recap of Percentage Indicators on Vocational-Specific Needs in the Dictionary

No.	Indicator	SS	S	N	TS	STS
		%	%	%	%	%
1	I need an Acehnese–Indonesian dictionary that specifically provides technical and vocational terms in my field.	43	36	17	2	2
2	I find it difficult to find the correct vocational terms in Acehnese from the current sources.	34	42	21	2	1
3	A dictionary app would be very helpful in understanding vocational-specific terminology.	42	42	15	0	1
4	A word search feature based on vocational categories (e.g., engineering, agriculture, fisheries) is very important to me.	44	37	18	0	1
5	The dictionary app should be easy to use and not require an internet connection for access at any time.	53	30	12	4	1
6	The dictionary app should have a simple and easy-to-understand interface.	51	35	11	2	1
7	I need a bookmark or favorites feature to save frequently used words.	41	18	1	1	
8	An offline dictionary feature in the app would be very helpful when I do not have	48	35	12	4	1

No.	Indicator	SS	S	N	TS	STS
	internet access.					
9	I want the dictionary app to be regularly updated with new vocational terms.	51	36	12	1	0

The data in the table highlight several key indicators regarding the need for an Acehnese–Indonesian dictionary focused on technical and vocational terms. A significant portion of respondents (43% strongly agreed and 36% agreed) expressed a strong need for a specialized dictionary, with only a few feeling neutral (17%) and very few disagreeing (2% each). This underscores the demand for more comprehensive Acehnese reference sources for technical terminology. Furthermore, 34% of respondents found it difficult to locate vocational terms in existing sources, while 42% found it somewhat difficult, reinforcing the necessity for a more focused dictionary. Additionally, 42% of respondents strongly agreed and another 42% agreed that a dictionary app would be highly useful for understanding specialized terminology, with very few disagreeing.

Key features such as word search by vocational category and offline access were deemed essential. Nearly half of the respondents (44% and 53%) strongly agreed on their importance, while others somewhat agreed. A user-friendly interface was also highly prioritized (51% strongly agreed, 35% somewhat agreed). Moreover, features allowing users to save frequently used words and operate the app offline received strong support, indicating a preference for functionality that enables repeated use and easy access. The majority of respondents (51% strongly agreed, 36% somewhat agreed) also emphasized the need for regular app updates to include new terms.

Overall, the findings indicate a strong need for an effective, accessible, and feature-rich Acehnese–Indonesian dictionary app tailored to vocational fields. The development of such a dictionary is crucial not only for Acehnese speakers but also for learners of the Acehnese language. Existing Acehnese dictionaries do not comprehensively include field-specific vocabulary, and the absence of domain labels limits their utility. A specialized Acehnese–Indonesian dictionary for vocational fields can serve as a model for similar initiatives in other regional languages.

As of 2020, 89% of Indonesia's 718 regional languages have yet to undergo vitality assessments (Kemdikbud, 2020), technology plays a crucial role in digitizing and preserving these languages. Transitioning from print to mobile applications enhances accessibility and facilitates continuous vocabulary expansion. Integrating pronunciation features based on the International Phonetic Alphabet (IPA) can standardize regional language sounds, ensuring consistency in terminology. Given that many vocational terms originate from foreign languages, the development of clear, systematic terminology guidelines is essential for maintaining linguistic accuracy and coherence (Ayu & Christie, 2023). This vocational dictionary serves as a strategic effort to inventory and classify regional language vocabulary while leveraging technology to support language preservation and learning in an interactive digital format.

CONCLUSION

The development of an Acehnese–Indonesian Dictionary for Vocational Fields represents a crucial innovation in language learning and technical terminology preservation. Unlike existing print dictionaries or generic digital lexicons, this dictionary integrates domain-specific vocabulary with multimedia features such as images and pronunciation guides, enhancing both comprehension and usability.

The research findings underscore strong support for this initiative, with 87% of respondents affirming the practicality of an Android-based dictionary over traditional printed

resources. Additionally, 87% expressed a preference for modern features, including images, audio pronunciation, and IPA transcription, to facilitate a more interactive learning experience. The significance of an audio feature for learning the pronunciation of technical terms was highlighted by 84% of respondents. Moreover, 79% emphasized the necessity of a specialized vocational dictionary with efficient search capabilities, offline accessibility, and an intuitive interface to optimize user experience.

This study contributes to lexicography and vocational education by offering a tailored solution that bridges the gap between traditional language documentation and contemporary digital tools. By integrating technology with localized linguistic resources, the proposed dictionary not only preserves Acehnese technical vocabulary but also enhances accessibility for learners, professionals, and educators in vocational fields. The development of this dictionary serves as a model for future lexicographic innovations, ensuring that indigenous languages remain relevant in an increasingly digital landscape.

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REFERENCES

Akmal, S., Harley, L. B., Rahmikawati, R., & Maulida, T. A. (2023). Acehnese Loanwords and Contact with Other World's Languages. *Lingua Cultura*, *16*(2), 193–203. https://doi.org/10.21512/lc.v16i2.7909

Alam, A. (2020). Google Translate Sebagai Alternatif Media Penerjemahan Teks Bahasa Asing ke dalam Bahasa Indonesia. *Jurnal Instruksional*, *1*(2), 159–163. https://doi.org/10.24853/instruksional.1.2.159-163

Amelia, P., Handayani, R., & Pratama, S. (2024). Developing a Multimodal Digital Storytelling-Based E-Book To Enhance the Seventh-Graders' English Skills. *Linguists : Journal Of Linguistics and Language Teaching*, *10*(2), 171–180.

Ayu, M., & Christie, K. J. (2023). Investigating Indonesian Vocational High School Voices in the Online Writing Class: A Case Study. *Linguists : Journal of Linguistics and Language Teaching*, *9*(1), 14. https://doi.org/10.29300/ling.v9i1.10008

Aziz, Z. A., Amery, R., & Mustafa, F. (2022). Consonant Changes in Loanwords Borrowed from Indonesian into Dialects of Acehnese. *Asian Linguistic Anthropology*, *4*(4), 1–19. https://doi.org/10.47298/jala.v4-i4-a1

Aziz, Z. A., Amery, R., & Mustafa, F. (2023). Vowel adaptations of Indonesian loanwords into dialects of Acehnese: Reinforcing Acehnese identity. *Studies in English Language and Education*, *10*(1), 447–46. https://jurnal.usk.ac.id/SiELE/article/view/25488

Budiwiyanto, A. (2022). *Kontribusi Kosakata Bahasa Daerah dalam Bahasa Indonesia*. Badan Pengembangan dan Pembinaan Bahasa. https://badanbahasa.kemdikbud.go.id/artikel-detail/792/kontribusi-kosakata-bahasa-daerah-dalam-bahasa-indonesia

Budiwiyanto, A. (2023). The use of lexical bundles in an online comprehensive dictionary of

Indonesian (KBBI Daring). *Lexicography*, *10*(1).

Cruttenden, A. (2021). *Writing Systems and Phonetics (1st ed.)*. Routledge. https://doi.org/https://doi.org/10.4324/9781003047155

Efrizal, D., Badeni, Kristiawan, M., Risdianto, E., & Febriani, H. (2024). Pedagogical and Cybergogy Orientation on Artificial Intelligence Era for English Subject in Islamic Boarding School. *Linguists: Journal of Linguistics and Language Teaching*, *10*(2), 235–248. https://doi.org/10.29300/ling.v10i2.5209

Fouz-González, J. (2017). Pronunciation instruction through Twitter: the case of commonly mispronounced words. *Computer Assisted Language Learning*, *30*(7), 631–663. https://doi.org/10.1080/09588221.2017.1340309

Guarte, J. M., & Barrios, E. B. (2006). Estimation Under Purposive Sampling. *Communications in Statistics - Simulation and Computation*, *35*(2), 277–284. https://doi.org/10.1080/03610910600591610

Gunawan, D., & Amalia, A. (2017). The Design of Lexical Database for Indonesian Language. *IOP Conference Series: Materials Science and Engineering*, *180*(1), 12052. https://doi.org/10.1088/1757-899X/180/1/012052

Hakim, M. A. R., Abidin, M. J. Z., & Bahari, A. (2018). Dictionary use to increase students' vocabulary mastery: Electronic dictionary or printed one. In *The 1st Bandung English Language Teaching International Conference (BELTIC)* (pp. 150-159)

Harpe, S. E. (2015). How to analyze Likert and other rating scale data. *Currents in Pharmacy Teaching and Learning*, *7*(6), 836–850. https://doi.org/10.1016/j.cptl.2015.08.001

James, T. C., & Lee, O. (2011). Using Likert-type scales in the social sciences. *Journal of Adult Education*, *40*(1), 19–22.

Kemdikbud. (2020). *Kamus Besar Bahasa Indonesia*. https://kbbi.kemdikbud.go.id/

Kurniawan, Y. S., Hakim, M. A. R., & Yanto, S. (2024). English For Islamic Banking: What English Need of Indonesian Syariah Bank Employees in Bengkulu City. *Linguists: Journal of Linguistics and Language Teaching*, *10*(1), 46-55

Lackaff, D., & Moner, W. J. (2016). Local languages, global networks: Mobile design for minority language users. *Proceedings of the 34th ACM International Conference on the Design of Communication*. https://doi.org/10.1145/2987592.2987612

Masykar, T., Hasan, R. B., & Pillai, S. (2022). Perception of English vowel contrasts by Acehnese-Indonesian bilingual learners of English. *Indonesian Journal of Applied Linguistics*, *11*(3), 718–728. https://doi.org/10.17509/ijal.v11i3.35086

Matondang, Z., Suri, I., & Agustina, C. I. (2022). *Kamus Budaya Aceh–Indonesia*. Balai Bahasa Provinsi Aceh.

Matondang, Z., Suri, I., & Zurriyat, S. (2021). *Kamus Kemaritiman Aceh-Indonesia*. Balai Bahasa Provinsi Aceh. https://repositori.kemdikbud.go.id/24613/

Nuthihar, R., & Wahdaniah, W. (2024). Kosakata Bahasa Aceh pada Penamaan Gampong di Kabupaten Aceh Barat: Tinjauan Deviasi Terhadap Ejaan Yang Disempurnakan Edisi V. *LINGUISTIK : Jurnal Bahasa dan Sastra;*, *9*(1), 177–184. https://doi.org/10.31604/linguistik.v9i1.177-184

Pine, A., & Turin, M. (2017). *Language Revitalization*. Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.8

Puspitawati, H., & Herawati, T. (2018). *Metode penelitian keluarga*. IPB Press.

Rahardja, U., Lutfiani, N., & Rahmawati, R. (2018). Student Perception to the News on The APTISI Website. *Jurnal Ilmiah SISFOTENIKA*, *8*(2), 117–127. http://sisfotenika.stmikpontianak.ac.id/index.php/ST/article/view/400

Rahman, F. R. B. A., Saravanan, M. B., Jambulingam, K., Shafie, R. S. B. S., & Abdullah, S. N. A. B. (2024). Phonetic Integration in Google Dictionary: Shaping English Pronunciation from the TESL Students' Perspective in Universiti Selangor. *International Journal of English Literature and Social Sciences*, *9*(4), 338–348. https://doi.org/10.22161/ijels.94.50

Riza, A., & Kawakib, A. N. (2021). *Utilizing the Phonetic Transcription of IPA (International Phonetic Alphabet) to Avoid EFL Students Miss-Pronunciation BT - Proceedings of the International Conference on Engineering, Technology and Social Science (ICONETOS 2020)*. 464–468. https://doi.org/10.2991/assehr.k.210421.067

Rizki, A., & Junaidi, T. (2020). *Pengantar Pembelajaran Bahasa Daerah Aceh*. Bina Karya Akademika.

Rusli, H., Wildan, Nuthihar, R., & Mukhlis. (2023). Vokal Nasal Bahasa Aceh dalam Kamus Kemaritiman Aceh-Indonesia Nasal. *Widyaparwa*, *51*(2), 392–404.

Saefullah, H. (2023). Pelatihan Pemanfaatan Google Translate dalam Pembelajaran Bahasa Inggris. *Jurnal Pengabdian Pada Masyarakat*, *9*(1 SE-Articles). https://doi.org/10.30653/jppm.v9i1.588

Santoso, S. (2008). *Panduan lengkap menguasai SPSS 16*. Elex Media Komputindo.

Shofi, A. T., & Ainiyah, M. (2024). Enhancing English Oral Communication Skills Through the Use of Artificial Intelligence. *Linguists: Journal of Linguistics and Language Teaching*, *10*(2), 315–330. https://doi.org/10.29300/ling.v10i2.5270

Sugiyono. (2012). *Metode Penelitian Kuantitatif, Kualitatif dan R&D [Quantitative, Qualitative, and R&D Research Methods]*. Alfabeta.

Wahyuningtyas, D., Kusuma, A., Febrianita, R., & Achmad, Z. A. (2021). Local language programs in cultural radios to maintain Indonesian national identity. *ETNOSIA : Jurnal Etnografi Indonesia*, *6*(1 SE-), 47–65. https://doi.org/10.31947/etnosia.v6i1.11973

Wildan. (2010). *Kaidah Bahasa Aceh*. Geuci.

Yusuf, Y. Q., Fata, I. A., & Karwinda, S. (2021). Oral monophthong vowel qualities of the Jamee language in Aceh. *Indonesian Journal of Applied Linguistics*, *10*(3), 794–803. https://doi.org/10.17509/ijal.v10i3.31767