

Digital Indonesian Arabic Dictionary For Improving Mastery Of Arabic Vocabulary

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Abstract

Mastery of Arabic vocabulary is essential for Indonesian Umrah pilgrims. Digital dictionaries help to master language. This study aims to develop and evaluate an Android-based Digital Indonesian Arabic Dictionary and Website. This study used the ADDIE Model. The instruments used were user assessment questionnaires, vocabulary mastery tests, interviews, and participatory observations—data analysis using Paired Sample T-Test. From the comparison of pre-test and post-test scores of users of the Digital Indonesian Arabic Dictionary, it is known that there is an increase in mastery of Arabic vocabulary in Indonesian Umrah Hajj pilgrims. They rated this dictionary product as good, sufficient, and excellent in aspects: user interface, word search, usage examples, translation features, and application quality. The Digital Indonesian Arabic Dictionary still has to be developed with new technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), Big Data, Metaverse.

Keywords: Hajj; Dictionary; Vocabulary; Digital Dictionary; ADDIE; Artificial Intelligence

INTRODUCTION

In this era of globalization, the increasing number of Indonesian Umrah pilgrims shows how important Hajj is for Muslims in Indonesia. In this context, the mastery of Arabic vocabulary places Arabic as the primary language used in various aspects of ritual and communication in the Holy Land. As the primary language in performing Hajj, Arabic is an obstacle for most Indonesian pilgrims who may need to become more familiar with the language (Hayati, 2022; Huda, 2018). Adequate Arabic language skills are required so that Umrah pilgrims can interact fluently (Hidayah, 2019), understand the instructions (Khairawati & Suri, 2021) and instructions given by the authorities, and perform Hajj properly.

The development of digital technology has had a significant impact on learning Arabic. Digital technology allows the development and utilization of digital Indonesian Arabic dictionaries as a tool that can potentially increase the mastery of Arabic vocabulary by Indonesian Umrah Hajj pilgrims (Hasanah, 2022; Nengrum & Arif, 2020). This digital dictionary can provide easy and quick access to a wide range of Arabic vocabulary relevant to the context of Hajj. With interactive features and an intuitive interface, digital dictionaries can help Umrah pilgrims expand their understanding and use of Arabic vocabulary practically and effectively.

Mastering Arabic is a significant challenge for Indonesian Umrah pilgrims, especially in terms of vocabulary mastery. Most Indonesian Umrah pilgrims may not have a formal educational background (Wulandari & Utami, 2022) or experience in learning Arabic, causing difficulties in understanding (Taufiqurochman, 2016) and applying the Arabic vocabulary needed in the context of Hajj and Umrah. Limited

guidance time and lack of resources available during Hajj preparation are obstacles to expanding Arabic vocabulary (Moh Rifa et al., 2021). Inadequate accessibility to Indonesian Arabic dictionaries is also an obstacle to learning vocabulary effectively. Therefore, efforts to develop a practical and efficient Digital Indonesian Arabic dictionary need to be produced to meet the needs of Indonesian Umrah Hajj pilgrims in increasing their mastery of Arabic vocabulary effectively.

The Digital Indonesian Arabic Dictionary allows Indonesian Umrah pilgrims to learn independently and understanding Arabic (Kurniawan, 2020; Rosyid, 2020a; Winaldi, 2020). With interactive and intuitive features (Utomo, 2020), the dictionary provides direct access to a wide range of Arabic vocabulary and information relevant to the context of Hajj and Umrah. They can use it anytime and anywhere, either before, during, or after the Hajj journey only (Rumkabu et al., 2023). Digital dictionaries allow Umrah pilgrims to explore vocabulary independently (Rosyid, 2020b), read definitions (Rezaei & Davoudi, 2016), and check examples of vocabulary usage appropriately only through their mobile phones (Arifin & Mulyani, 2021). With the ability to learn independently, pilgrims can improve their mastery of Arabic vocabulary according to their individual needs and level of understanding to be more confident and ready to face communication situations in Arabic during their Hajj journey.

The Digital Indonesian Arabic Dictionary developed in this article has uniqueness and advantages that distinguish it from existing digital dictionaries. The prominent essence of this digital dictionary is the completeness of the vocabulary compiled by this dictionary because it comes from a primary source in the form of the largest and most complete dictionary in Indonesia, namely the Arabic-Indonesian *Al-Munawwir* Dictionary (Munawwir, 1984) and Indonesian-Arabic (Munawwir, 2007), and supplemented from other secondary sources. In addition, this dictionary is easily compatible with all Android-based phones; the design is simple, the application is small, and it can also be accessed through the website. Some of these advantages make this product unique and innovative in helping master Arabic vocabulary for Indonesian Umrah pilgrims.

The purpose of developing this digital dictionary is to significantly contribute to improving the mastery of the Arabic vocabulary of Indonesian Umrah pilgrims. It is hoped that this dictionary will help them master vocabulary effectively and efficiently (Bakker, 2020) and understand Arabic well in the context of Hajj and Umrah. With easy access, interactive features, and a focus on the needs of pilgrims, this digital dictionary provides practical support in preparation for Hajj and Umrah trips so that pilgrims are more confident and proficient in using Arabic vocabulary during their pilgrimage to the Holy Land.

METHOD

This research includes Research and Development (R&D) using the ADDIE Model (Analysis, Design, Development, Implementation, and Evaluation). This model is appropriate for research that combines the steps of product development or innovation with empirical evaluation (Saeidnia, 2022; S. J. Yu, 2021). This model is also relevant in the context of developing the Digital Indonesian Arabic Dictionary which aims to improve Arabic mastery for Indonesian Hajj pilgrims. This research lasts for 3 months, from April to June 2023, starting from the needs analysis stage to the evaluation and

analysis of research results. At the product implementation stage, this research took place in 4 Umrah Hajj Guidance Groups, that is Nurul Faizah Surabaya, At-Tawwabin Malang, Al-Hidayah Sampang Madura, and Al-Izzah Pandeglang Banten.

The population of this study was 530 pilgrims who followed the guidance of Hajj while learning Arabic. The sample used was purposive sampling with inclusion criteria: age, gender, education level, Arabic language proficiency, digital literacy, and educational facilities such as internet access and mobile phone use. Referring to the sampling table (Krejcie & Morgan, 1970), the researcher set the number of samples at 220 people.

This ADDIE Model procedure includes 5 stages, namely:

1. The analysis includes a) Identification of the needs and challenges of mastering Arabic vocabulary by Indonesian Umrah pilgrims; b) a Review of relevant literature on Arabic language learning and the use of digital dictionaries; c) Conducting surveys or interviews with Indonesian Umrah pilgrims to understand their needs and preferences regarding digital dictionaries.
2. Design, including: a) Develop plans and objectives for the development of a digital Indonesian Arabic dictionary; b) Determine the structure and format of the digital dictionary to the needs of Indonesian Umrah pilgrims; c) Design an intuitive and easy-to-use user interface; d) Determine the features needed, such as word search and examples of use in sentences (Crewell, 2013).
3. Development, including a) Gathering and organizing relevant Arabic vocabulary, including those needed by Umrah pilgrims; b) Translating the vocabulary into Indonesian and vice versa; c) Building a database of digital dictionaries by including vocabulary, definitions, and usage examples; d) Develop digital dictionary features, including search functionality and responsive user interface.
4. Implementation, including: a) Piloting a prototype digital dictionary to a group of Indonesian Umrah pilgrims; b) Collecting feedback and suggestions from users regarding their experience in using the digital dictionary; c) Making revisions and improvements based on such feedback.
5. Evaluation, including: a) Evaluating the effectiveness of digital dictionaries in improving mastery of Arabic vocabulary by Indonesian Umrah Hajj pilgrims; b) Measure vocabulary mastery before and after using digital dictionaries; c) Collect data from users about the satisfaction and ease of use of digital dictionaries; d) Analyze evaluation data to evaluate the success of digital dictionaries in achieving research objectives.

The instruments used in this study were: 1) a user rating questionnaire, 2) a vocabulary mastery test, 3) an interview or focus group, and 4) participation observation.

Table 1. User Assessment Instruments

Assessment Aspect	Indicator	Number	Total
User Interface	Ease of user interface navigation	1	3
	Text display readability	2	
	Clarity and consistency of layout	3	
Word Search	Word search speed	4	3
	Word definition accuracy	5	
	Completeness of vocabulary	6	
Usage Examples	Relevance of examples of vocabulary use	7	2
	Ease of understanding vocabulary examples	8	
Translation Feature	Language translation accuracy	9	2

	Completeness of vocabulary translation	10	
Application Quality	Easy App Installation	11	2
	Size of Digital Dictionary App	12	

Table 2. Vocabulary Test Instrument

Assessment Aspect	Indicator	Number	Total
Understanding the meaning of words	Provide precise definitions	1, 18	6
	Present appropriate synonyms	15, 2	
	Use words in sentences	16, 24	
Use of Words in Context	Use words in context	3, 23	5
	Choosing words for the right situation	14, 22	
	Express word understanding	17, 25	
Remembering and Applying Vocabulary	Remembering Arabic vocabulary	4, 19	6
	Repeating the meaning of an Arabic word	12, 20	
	Apply vocabulary according to the situation	13	
Ability to Connect Vocabulary	Associate vocabulary with relevant topics	5, 6	4
	Describe the relationship between vocabulary and topics covered	7, 11	
Passive and Active Vocabulary	Recognize words when they are presented in context or sentences	8, 21	4
	Use vocabulary actively	9, 10	

Quantitative data from user rating questionnaires are analyzed by descriptive statistical methods which include: User Interface, Word Search, Usage Examples, Translation features, And Application Quality. Researchers also used a statistical test of pre-test and post-test comparison with the Paired Sample T-Test to compare significant differences in Arabic vocabulary test results in users before and after the use of digital dictionaries (Sugiyono, 2015). Thus, it will be known whether or not there is an influence of the Digital Indonesian Arabic dictionary on the mastery of Arabic vocabulary.

The data that researchers collect from interviews or focus groups are analyzed by content analysis methods or thematic analysis to identify patterns of user feedback related to ease, usefulness, and satisfaction with digital dictionaries. Observational analysis is also used by researchers to describe user interactions with digital dictionaries, difficulties faced, and successes achieved.

RESULT AND DISCUSSION

Product Development Results

The product "Digital Indonesian Arabic Dictionary" is based on Android and has been published on Play Store. Users can type the keyword "Kamus Arab Indonesia Digital" on an Android phone (Fig. 1), then install it quickly and easily. Users can also download it with the link: <https://play.google.com/store/apps/details?id=com.shiroth.arabindonesiadigital>. Once installed, the initial display of the dictionary (Fig. 2) will appear. Users who want to access this Digital Indonesian Arabic Dictionary through the website (Gambar. 3), can click the link: <https://arabindonesiadigital.blogspot.com/2022/01/kamus.html?m=1>



Fig. 1



Fig. 2



Fig. 3

This Digital Indonesian Arabic Dictionary product contains more than 80,000 vocabularies, capable of translating vocabulary from Arabic to Indonesian and from Indonesian to Arabic. This dictionary application on Google Play Store is only 832 kilobytes in size so it does not burden Android-based phones. It is mobile and can be used anytime and anywhere. Each Arabic word has been punctuated (harakat) for easy reading. Every word can be copied and pasted quickly and easily. There is no need for instructions for use because users will certainly immediately understand how this dictionary operates.

User Rating

In this study, 220 respondents became the research sample, consisting of 105 men and 115 women. All of them are prospective Indonesian Umrah pilgrims from the 4 Umrah Hajj Guidance Groups. Their ages vary from 20 to 74 years old.

Table 3. Age of Digital Dictionary Users

Age	Age Range	Frequency
Teenager	17 - 25	3
Young Adults	26 - 39	87
Middle-aged Adults	40 - 59	109
Older Adult	60 - 74	21
Elderly	75 - 90	0
Total		220

The education level of the users of this dictionary also varies from elementary to postgraduate levels. Most users are senior school graduates.

Table 4. Education Level of Dictionary Users

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary School	5	1.4	2.3	2.3
	Junior High School	25	6.9	11.4	13.6
	Senior High School	130	35.9	59.1	72.7
	Bechelor	50	13.8	22.7	95.5
	Postgraduate	10	2.8	4.5	100.0
Total		220	60.8	100.0	
Missing	System	142	39.2		
Total		362	100.0		

Table 5. Information about User Dictionaries

Category	Scale	Arabic Proficiency		Digital Literacy		Educational Facilities	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Very Less	1	52	24	6	3	1	0
Less	2	122	55	40	18	3	1

Sufficient	3	36	16	95	43	56	25
Good	4	10	5	77	35	102	46
Excellent	5	0	0	2	1	58	26
		220	100	220	100	220	100

Table 5. Showing that the user's Arabic proficiency is less (55 percent) and very less (24 percent), none of which is very good. while the digital literacy of users such as the ability to use applications on mobile phones is sufficient (43 percent) and good (35 percent). in terms of educational facilities such as accessing information, users who claim to be good are 46 percent and enough as many as 25 percent.

The data above shows the low Arabic language skills of Indonesian Umrah pilgrims, even though they have good access in terms of digital literacy and available educational facilities. This means that their Arabic language skills can still be improved. One of them is by mastering Arabic vocabulary through the Digital Indonesian Arabic Dictionary application.

Table 6 and Table 7 are the assessment results of questionnaires answered by users after they use the Digital Indonesian Arabic dictionary. This rating uses a Likert scale (1: Very Less; 2: Less; 3: Sufficient; 4: Good; 5: Excellent). Table 6 describes aspects of user interface and word search. on the user interface aspect, about navigation; out of 220 users: 105 users rated good, 62 users rated sufficient, 50 users rated excellent, 3 users rated less, and no one rated very less. about text display; 106 users rated good, 63 users rated enough, 46 users rated excellent, and 5 users rated less.

On the aspect of word search, about speed; 99 users rated good, 92 users rated excellent, 26 users rated sufficient, 2 users rated less, and no one rated very less. Regarding accuracy; 92 users rated excellent, 88 users rated good, 44 users rated sufficient, and no one rated poor or very less. about completeness; 90 users rated good, 89 users rated very good, 41 users rated sufficient, and no one rated less and very less.

Table 6. User ratings about User Interface and Word Search

		User Interface						Word Search					
		Navigation		Text Display		Layout		Speed		Accuracy		Completeness	
		freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Valid	Very Poor	0		0		0		0		0		0	
	Poor	3	1.4	5	2.3	7	3.2	2	.9	0		0	
	Moderate	62	28.2	63	28.6	58	26.4	26	12.3	40	18.2	41	18.6
	Good	105	47.7	106	48.2	115	52.3	99	45.0	88	40.0	90	40.9
	Excellent	50	22.7	46	20.9	40	18.2	92	41.8	92	41.8	89	40.5
Total		220		220		220		220		220		220	

Table 7. User ratings about User examples, Translation Features, Application Quality

		Usage Examples				Translation Feature				Application Quality			
		Relevance		Convenience		Translation		Vocabulary		Installation		File Size	
		freq	%	freq	%	freq	%	freq	%	freq	%	freq	%
Valid	Very Poor	0		0		0		0		0		0	
	Poor												

Poor	0		0		0		0		8	3.6	6	2.7
Moderate	58	26.4	50	22.7	25	11.4	22	10.0	54	24.5	55	25.0
Good	130	59.1	137	62.3	99	45.0	99	45.0	87	39.5	85	38.6
Excellent	32	14.5	33	15.0	96	43.6	99	45.0	71	32.3	74	33.6
Total	220		220		220		220		220		220	

Table 7 describes user ratings on aspects of examples, translation features, and application quality. In these three aspects, out of 220 users, no user rated very poor. on the aspect of examples, about relevance; 130 users rated good, 58 users rated sufficient, 32 users rated excellent, and no one rated poor. About convenience; 137 users rated good, 50 users rated sufficient, 33 users rated excellent, and no one rated poor.

On the aspect of the Translation Feature, about Translation; 99 users rated Good, 96 users rated Excellent, 25 users rated sufficient, and no one rated less. About vocabulary; 99 users rated Excellent and Good, 22 users rated it sufficient, and no one rated less. On the aspect of Application Quality, about installation; 87 users rated Good, 71 users rated Excellent, 54 rated sufficient, and 8 users rated Less. About file size; 85 users rated Good, 74 users rated Excellent, 55 users rated Moderate, and 6 users rated Poor.

From tables 6 and 7 regarding user ratings of Indonesian Digital Arabic Dictionary products, it can be concluded that no one user rates this dictionary with very less on 5 aspects of digital dictionaries. Poor values were found to be very few, namely about relevance, text display, speed, installation, and file size. After being examined through observation, users who rated poor were elderly users or users who had low digital literacy skills so they found it difficult to install, operate applications, and translate vocabulary.

User Vocabulary Test

Before the introduction of a product in the form of a digital Indonesian Arabic dictionary, in the Umrah Hajj guidance activity, each user took a test at the beginning and at the end of the guidance to know the development of his ability to master Arabic vocabulary. From the test results, it is known that from 220 users, the average pre-test score is 65.38 percent and the post-test is 77.06 percent That is, there is an increase in vocabulary mastery. The following are the results of statistical analysis with the Paired Sample T-Test.

Table 6. Paired Samples Test

Pair 1	PRE TEST - POST TEST	Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower Upper			
		-11.68636	6.40254	.43166	-12.53710 -10.83563	-27.073	219	.000

Table 6. Indicates that sig. (2-tailed) < 0.05 indicates a difference between the initial variable and the final variable. This means that there is a significant influence on the difference in the treatment of each variable. Thus, the product developed in the form of a Digital Indonesian Arabic dictionary has a significant influence on increasing vocabulary mastery in Indonesian Umrah Hajj pilgrims.

User Interaction and Digital Dictionary Products

From the results of interviews and participatory observations, it is known that users welcome the presence of this Digital Indonesian Arabic dictionary product because it has helped them understand Arabic vocabulary. With this product, they claim to be more confident in learning Arabic and can be used to learn Arabic independently. Users expect this product to continue to be developed, both in terms of content and technology. The suggestion from users for the development of this Digital Indonesian Arabic dictionary is the addition of audio pronunciation (Pronunciation Audio) such as transformation technology from sound to text or from text to sound.

Digital Indonesian Arabic Dictionary Products

This Digital Indonesian Arabic Dictionary product is not the first. On the Google Play store page, there are many digital applications, including Arabic-based dictionaries such as (Zahrah et al., 2021) Kamus Arab Indonesia (by Ristek Muslim), Arab-Indonesia (by Eflasoft), Indonesia - Arab Translator (by Suvarov-Development), Bahasa Indonesia - Arab (by TTMA Apps) until Kamus Al-Munawwir Arab-Indo (by Quamus ID) which is the most complete Arabic-Indonesian dictionary in Indonesia (Taufiqurrochman, 2006). which is the most complete Arabic-Indonesian dictionary in Indonesia.

Research on Android-based digital dictionaries and websites has also been numerous (Allam & Nassef, 2022; Dallaji et al., 2020; Jarrar, 2021; Madaniah et al., 2020a; Omar & Dahan, 2011; Parmawati, 2022; Rahimadinullah et al., 2022). However, the product of this research was developed with a different purpose from other research, namely equipping Indonesian Umrah pilgrims who based on the results of the analysis require mastery of vocabulary to interact and communicate in the holy land. Looking at the pre-test and post-test results from users, this Digital Indonesian Arabic dictionary has proven successful in providing changes and improvements in mastering Arabic vocabulary for Indonesian Umrah Hajj pilgrims.

This Digital Indonesian Arabic Dictionary received good ratings from users (Tables 6 and 7) who appreciated and hoped that it would continue to be developed. It is important to pay attention to digital literacy and Arabic language education facilities for Indonesian Hajj and Umrah pilgrims so that they have a good understanding of Arabic to avoid negative situations, such as getting lost, communication errors that have the potential to trigger conflict, and others (Husna et al., 2021; Moh Rifa et al., 2021; Wulandari & Utami, 2022).

Technology Products and Vocabulary Mastery

The rapid development of digital products with the emergence of mobile-based digital dictionaries that can be accessed easily, quickly, and cheaply, is a challenge and opportunity for the world of education to take part in producing learning media and preparing teaching materials that suit user needs. In Arabic language learning, there is a study of learning Arabic for a specific purpose (Fatoni, 2019; Library, n.d.). This study can be developed by providing appropriate teaching materials for pilgrims, especially in the selection of vocabulary and communicative sentences that can be used by pilgrims from leaving to returning from the holy land (Pallades, 2022).

The development of Arabic lexicography in Indonesia is also growing rapidly. In the past, before 2000, Arabic dictionaries were dominated by general Arabic dictionaries

(Taufiqurrochman, 2019). However, in the last 20 years, many specialized Arabic dictionaries have begun to emerge such as special dictionaries for tourism, Hajj, business, medicine, law, and so on. This shift from general to specialized dictionaries indicates the development of Arabic which began to penetrate all fields (Ahsanuddin, 2022; Berrichi, 2021). If in the past Arabic was only used as a tool to understand texts from scriptures and classical references, now Arabic has become a communication tool for wider needs. Therefore, the extension of the Digital Indonesian Arabic dictionary that is specifically usable by Hajj pilgrims is important.

The vocabulary in Arabic is constantly expanding with additions, expansions of meaning, and uses to suit new contexts (Bobrovnikov, 2020; Carter, 2020). Although Arabic dictionaries, including the developed Digital Indonesian Arabic dictionary, have more than 80,000 words, vocabulary mastery remains a challenge in learning Arabic (Mottaghizadeh, 2020). Users have also expressed shortcomings of this dictionary, such as the absence of audio and image features. Therefore, researchers continue to develop this dictionary with new technology to meet the needs of Indonesian Hajj and Umrah pilgrims.

In addition to digital dictionaries, various technologies have been developed that are relevant to the needs of Hajj and Umrah pilgrims. An example is the Automatic Chatbot Dictionary which is starting to utilize AI technology (Haristiani, 2021; Obaid, 2023; Shi, 2022; J. Yu et al., 2022; S. J. Yu, 2021), Mobile Virtual Reality application as a vocabulary learning medium (Arifin, 2021; Jalaluddin, 2020; Marcellino, 2022; Yusuf, 2020), Radio Frequency Identification (RFID) technology to monitor pilgrims, Hajj Guide System for Hajj officers in overcoming crowds (Ilias, 2022; Mandourah & Yamin, 2022), Manasek Augmented Reality to find the right location point (Taileb et al., 2014), Health Apps to Prevent Influenza (Haworth et al., 2013), and other technological products that continue to be developed for the needs of Hajj pilgrims.

Seeing the rapid development of technology and the development of digital applications, researchers admitted that this Digital Indonesian Arabic Dictionary product is far from perfect so it needs to be developed. There should be a selection of Arabic vocabulary words that are needed by the user (Arifin & Mulyani, 2021; Ekawati & Suryani, 2019; Madaniah et al., 2020b), including by Indonesian Umrah pilgrims. In addition, there needs to be teaching methods and materials that are compatible with the developed media. The emergence of new technology also has the potential to develop Arabic dictionaries, including for communication purposes for Indonesian Umrah Hajj pilgrims in the future.

CONCLUSION

The Digital Indonesian Arabic Dictionary developed by researchers significantly contributes to improving the mastery of the Arabic vocabulary of Indonesian Hajj and Umrah pilgrims. The vocabulary test results increased from the pre-test with an average of 65.38 percent to the post-test with an average of 77.06 percent. User ratings of this dictionary are primarily good, sufficient, and excellent, with no one rating significantly less. Some users who gave the lowest rating were elderly and had limited digital literacy, so they faced difficulties installing and using this dictionary. The development of Digital Indonesian Arabic dictionaries in the future must utilize new technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), Big Data, and Metaverse. So

that users from different backgrounds can more efficiently utilize digital dictionaries. In addition, it is expected that cooperation between the government, education practitioners, and application developers to create an ideal and excellent dictionary intended explicitly for Indonesian Hajj and Umrah pilgrims.

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