Development of Augmented Reality-based Arabic *Uslub* Materials to Improve Daily Language Style Ability

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Article History	**Abstract**
	Background: Language is a communication tool every person uses to express their desires. However, few students who learn Arabic find it challenging to speak the daily language with the correct *uslub*. **Objective:** This study aims to develop the Arabic language based on Augmented Reality to improve the ability to express with the correct phrasing and diverse language styles. **Method:** This study used the RnD method with the ADDIE model. The research location is at the IAIN Sultan Amai Gorontalo Language Development Center. The population is 100 students, and the sample is 30 students. The data collection procedure is done by observation, interview, lift, and test. Data analysis techniques are carried out with T-tests, and presentations are carried out with Likert scales. **Results and Discussion:** This study produced several recommendations that the basis of Augmented Reality can improve students' ability to express Arabic with the correct *uslub* **Conclusion and Implication:** This study concluded that students' ability to express themselves with the Arabic language needs to be accompanied, trained, and continue to be familiarized with campus life so that daily expressions become spontaneous habits. The implications of this study suggest that learning Arabic using standard terms can be helped by *augmented reality* as a technology that combines digital elements, such as images, sounds, and virtual objects, with user needs.
	Augmented Reality; Arabic; Uslub; Daily Language Expressing; Ta'bir
Corresponding Author: **Adtman A. Hasan** Adtman123@gmail.com	**Abstrak** **Latar Belakang:** Bahasa adalah alat komunikasi yang digunakan oleh setiap orang untuk mengungkapkan keinginannya. Namun tidak sedikit mahasiswa yang belajar bahasa Arab sulit mengungkapkan bahasa harian dengan *uslub* yang benar. **Tujuan:** Penelitian ini bertujuan untuk mengembangkan *uslub* bahasa Arab berbasis Augmented Reality untuk meningkatkan kemampuan berekspresi dengan bahasa yang benar dan gaya bahasa yang beragam. **Metode:** Penelitian ini menggunakan metode RnD, dengan model ADDIE. Lokasi penelitian berada di Pusat Pengembangan Bahasa IAIN Sultan Amai Gorontalo. Populasi sebanyak 100 mahasiswa dan sampel sebanyak 30 mahasiswa. Prosedur pengumpulan data dilakukan dengan observasi, wawancara, angkat dan tes. Teknik analisis data dilakukan

dengan uji T dan presentasi dilakukan dengan skala likert.

Hasil dan Pembahasan: Penelitian ini menghasilkan sejumlah rekomendasi bahwa basis Augmented Reality dapat meningkatkan kemampuan mahasiswa dalam berekspresi bahasa Arab dengan *uslub* yang benar.

Kesimpulan dan Impilikasi:

Penelitian ini menyimpulkan bahwa kemampuan mahasiswa dalam berekspresi dengan *uslub* bahasa Arab perlu didampingi, dilatih dan terus dibiasakan dalam kehidupan kampus, sehingga ungkapan harian tersebut menjadi kebiasaan yang spontan diucapkan. Implikasi penelitian ini menunjukkan bahwa belajar *uslub* bahasa Arab dengan menggunakan ungkapan sehari-hari dapat dibantu dengan *augmented reality* sebagai teknologi yang menggabungkan elemen digital, seperti gambar, suara, dan objek virtual, dengan kebutuhan pengguna.

BACKGROUND

A language is a communication tool organized into units, such as words, groups of words, clauses, and sentences expressed orally and in writing.[1],[2] Every person uses language to express their desires. Language is inseparable from human life because it is humans who use language itself to interact.[3] In its implementation, language learning needs to start with vocabulary learning. As stated, to prepare students for mastering language proficiency, it is necessary first to master sufficient vocabulary.[4] According to Noermanzah, since childhood, we have used simple language such as 'oe' developed into Mama/Papa, developed into "Cayang", developed into "I Love You" and set into "Since I looked at you, my heart and blood trembled and...". In this case, language develops according to the development of communication tools, human physical development (phonemes, morphology, syntax, and discourse), and the development of human roles in life. It isn't easy to imagine if we live without language as a means of communication. On this occasion, the researcher emphasized Arabic proficiency.[5]

Arabic is one of the oldest Semitic languages and still exists today. Arabic is particular from other languages because of its high literary value for those who study it, and Arabic is also destined to be the language of the Qur'an that communicates the kalam, Allah. There is a fantastic language to man, and no one can match it. In Indonesia, Arabic is one of the lessons that has begun to be taught at the kindergarten level; students are introduced to Arabic vocabulary. Students begin to be taught Arabic proficiency at the next level, Madrasah Ibtidaiyah level or Primary School level. As with other languages, to prepare students for mastering language proficiency, it is necessary first to master sufficient vocabulary. [6][7]

A person's proficiency in a language requires the role of vocabulary. However, Arabic learning is less desirable by the public compared to other languages.[8] The results of research in the field show that a teacher in teaching sometimes uses a complicated method that leads to monotonous learning. This causes many students to be unenthusiastic when learning and even dislike Arabic language learning. Likewise, learning Arabic vocabulary is considered problematic.

Given that the vocabulary aspect is essential in Arabic, it is necessary to use a method in the learning process to achieve learning outcomes as expected.[9] But it is not uncommon for writers to find that when learning Arabic, many people experience difficulties in terms of vocabulary and ability in the delivery. When implementing Arabic learning in schools, students often struggle to remember Arabic vocabulary and pronunciation.[10] However, the ability to speak Arabic is essential in today's life. As an international language, Arabic is often

used in several fields, such as education, medicine, engineering, and other vital areas. The use of international languages in the industrial revolution 4.0 is necessary because many differences in local languages make it difficult for everyone to communicate. Developed nations care about the fate of the next generation, while language is the primary key for the nation's generation to open windows to the world.

The growing use of Arabic and the ever-increasing problems in applying Arabic language learning do research on learning media development important. Previous research mentioned that the use of media in learning can increase effectiveness, interest, motivation and understanding. In addition, the media used is also close to the characteristics of Indonesians in the era of technological digitalization[11] In everyday life, you cannot escape from mobile phones and the internet to find references and access social networks such as WhatsApp, Facebook, Twitter, and other social media. So it is very appropriate if the learning media in Arabic courses utilize Android-based applications.

Data from Hakim's research mention interactive multimedia that can be well developed to be applied to learning[[12]–[14]. The results of the post-test comparison analysis showed a significant difference in vocabulary mastery scores between the experimental class of 51.83 and the control class of 41.25, with an average difference of 10.58. The result of the t-test shows the number of sig values. 0.004. Based on the results of the effectiveness test shows that this interactive multimedia can significantly improve students' mastery of Arabic vocabulary.

From previous studies related to Arabic vocabulary, previous researchers solved it by developing various interactive media, including Smart Tree Learning Media - We Can Be Based on Android For Arabic Subjects. The advantages of this media with the Three-Dimensional Smart Tree media are: (1) The learning media of the Smart Tree-Kita can be designed to be applied using an Android application-based smartphone, (2) There are learning materials that include rules and grammar material in the Arabic 1 course, (3) The learning media of the Smart Tree-Kita can be used repeatedly, (4) Students of the Arabic Language Education Department can actively participate during the process learning takes place, (5) Allows students of the Arabic Language Education Department to interact with other Arabic Language Education Department Students and discuss during the learning process, and the weakness of research and development limitations on the application of learning media Smart Tree-We can be android-based for Arabic language courses, only two tests are used, namely expert tests and limited tests to students of the Arabic Language Education Department Study Program Sharia Economics, Trunojoyo University, Madura.

Research conducted by Pramono and Setiawan on the use of augmented reality technology as a learning medium for fruit recognition.[15] Based on the results of literature studies, analysis of system design, implementation and testing, conclusions such as the following have been successfully built augmented reality applications, and by using augmented reality technology that is user-friendly, teachers and students (users) can introduce and understand fruits easily.

Referring to the background, the researcher initiated a breakthrough to conceptualize the Arabic *uslub* application and increase mastery of Arabic vocabulary for Semester IV Students of the Department of Arabic Language Education IAIN Sultan Amai Gorontalo. Breakthrough concept of Arabic *uslub* application based on Augmented Reality. Augmented Reality combines the real world with the virtual world in the form of two or three dimensions projected in a natural environment simultaneously.

Augmented Reality is often also called tethered Reality. The main goal of Augmented Reality is to create a new environment by combining the interactivity of real and virtual environments so that users feel that the built environment is natural. In other words, users feel no perceived difference between AR and what they see and feel in the natural

environment. With the help of AR technologies (such as vision, computing and object recognition),[16] the natural environment can integrate into digital (virtual) form. Information about things and the environment around us can be added to the AR system, and then the data is displayed on a real-world screen in real time as if the information is fundamental so that the user's understanding becomes clear.[17] This application is often applied in a game. The merger of the natural world with the virtual is done to arouse user perception in understanding information from objects they recognize. Researchers conceptualize the application using the ADDIE development model. Researchers are trying to provide breakthroughs in features that can be used to improve mastery of Arabic vocabulary. With media like this, it is hoped that both efforts can be achieved so there is no assumption that learning Arabic is challenging.

LITERATURE REVIEW

1. *Uslub*

In Arabic tradition, the term style is known as uslūb. In general, uslūb is defined as a way of expressing speech. Based on this sense, uslūb is divided into two, namely uslūb adabī (literary style) and uslūb 'ilmī (scientific language style). Literati, storytellers, poets, and orators used uslūb adabī; Natural scientists use uslūb 'ilmī. According to al-Zarqani, uslūb is the way speakers use to convey the meaning and intent of their speech.[18] As stylistic, the definition of uslūb has various meanings, so it is difficult to limit clearly and measurably, but in general, *uslub* is the selection made by the speaker of certain linguistic signs to express what he wants. [19]

Ghithas summarizes some basic assumptions that can be understood in defining uslūb in various forms, among them narrative, descriptive, argumentative, persuasive, poetic, rhetorical, and scientific *uslub*.[20]
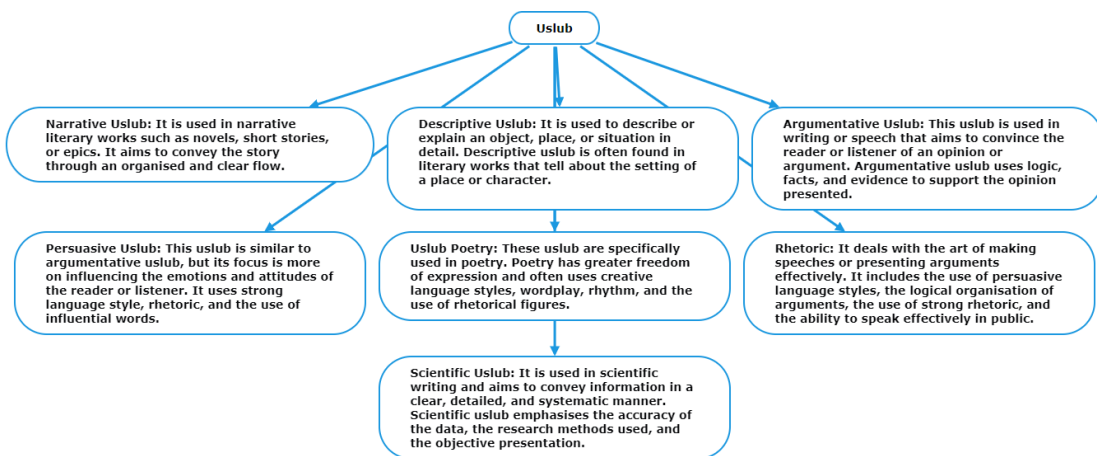
2. Daily expression

Language is essentially the orderly speech of human thoughts and feelings, which uses sound as its instrument.[21] *Daily expression* is a term that refers to everyday expressions used in regular communication. These phrases involve greetings, questions about health, apologies, thanks, and so on.[22] They help interact with others and create a friendly, relaxed atmosphere in everyday conversation. [23] *Daily* expressions are phrases often used in everyday conversation to convey messages and emotions or communicate daily needs. It is commonly used in informal or casual situations between friends, family, or co-workers.[24] As for the language of daily expression, it consists of vocabulary that is widely used by students, including:

No	Expressing Daily Arabic	Expressing Daily English
1	مرحباً	Hello/Hi
2	كيف حالك	How are you?
3	أنا بخير، شكراً	I'm fine, thank you
4	سررت بلقائك	Nice to meet you
5	من فضلك	Please
6	على الرحب والسعة	You're welcome
7	عذراً	Excuse me
8	آسف	Sorry
9	أين يوجد	Where is...?
10	هل يمكنك مساعدتي	Can you help me?
11	كيف يمكنني الوصول إلى...؟	How can I get to...?
12	هل يمكنك مساعدتي من فضلك؟	Can you help me, please?
13	لا أفهم	I don't understand
14	مع السلامة	Goodbye

METHOD

This research uses ADDIE research and development methods[[25]–[28] to produce a product in the form of an online Arabic dictionary application based on Augmented Reality which will be tested on 30 students of the Department of Arabic Language Education IAIN Sultan Amai Gorontalo who is learning Arabic in an *intensive training Arabic program* that aims to introduce Arabic *uslub* quickly.

This research was conducted at the IAIN Sultan Amai Gorontalo Language Development Center to determine the effectiveness of the Augmented *Reality-based Arabic Uslub* application. This research was conducted offline from July – August of the academic year 2022-2023.

The data collection instruments used are expert validation instruments and student assessment instruments. Validation involves Experts 1 and 2, which aim to determine the developed product's validity level. Collecting student data is done by distributing questionnaires so that these students can quickly assess and determine what should be evaluated.

This study uses the Likert scale [[29]–[31], which serves to measure research variables that affect the feasibility of a learning product. Then the variables to be measured are described as variable indicators. Existing indicators become the starting point for compiling

instrument items through questions or statements. Answers from instrument items are weighted at intervals of 1 to 4 to avoid hesitant or neutral answers. The Likert scale is shown in Table 1

Table 1. Likert scale

| Scale	Description
4	Very interesting/very clear/very good/very easy/very appropriate
3	Attractive/clear/excellent/easy/appropriate
2	Uninteresting/unclear/unkind/not easy/inappropriate
1	Very unattractive/very unclear/very unkind/very uneasy/very inappropriate

Data analysis is carried out after all the required data is collected. As already explained, the data on this development was obtained using questionnaires collected from test subjects, namely expert 1, expert 2, and fourth-semester students of the Arabic Language Education Department. The analysis process is carried out by calculating the percentage of answers from the questionnaire. The result of the calculation will determine the degree of validity of the final product. The equation used to process data from Expert 1, expert 2, and students use the equation (3.1)

$$V = \frac{TS_e}{TS_h} \times 100\% \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3.1)$$

Information:

V   : Validation (Members 1, Members 2, Learners)

TSe   : Total empirical score achieved

TSh   : Maximum total score

The stages of research using the ADDIE model. The selection of this model is based on the consideration that this model is developed systematically and is based on the theoretical foundation of learning design. This model is arranged programmatically with a systematic sequence of activities to solve learning problems related to learning resources that are following the needs and characteristics of learners. This model consists of five steps, namely: (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. The stages of the ADDIE Model can be seen in Figure 1.
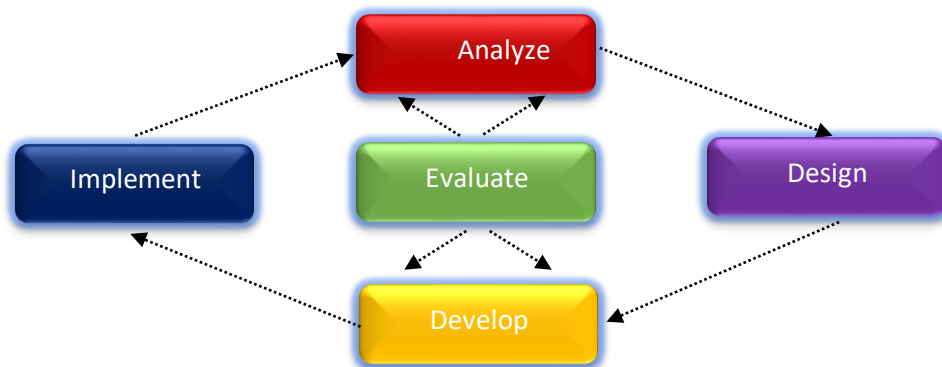
Picture 1. Stages ADDIE Model Dick and Carey

The analysis is the first step in the ADDIE development procedure[[32], [33]. At the analysis stage, researchers analyze problems in Arabic language learning and find solutions by referring to studies related to Arabic or research on interactive learning media. The results of the problem analysis and research references are then combined, producing the concept of Augmented Reality-based applications that can increase Arabic vocabulary. Then researchers analyze the needs of *software* and *hardware* by the desired image so that the concept work is more efficient and effective.

Design is the second step of ADDIE's development research phase[[34], [35]. After conducting an analysis and getting the desired data from observations, the data obtained will be processed to plan a design. At the design stage, researchers design methods and application strategies that are easy for users to understand based on problem analysis and software and hardware needs analysis. In the design phase, researchers use *software* and *hardware* as needed.[36]

The Development Stage is the stage in realizing the design into Reality, which is the stage of developing applications designed by researchers with the ADDIE model. Development of an Arabic *uslub* application *based on* Augmented Reality *to improve mastery of Arabic uslub* by making the display of natural objects accompanied by the names of things in Arabic and Indonesian. The development process is divided into two stages: application and trial instrument. Application development is done by collecting design results and compiling all concepts into an application with the help of *Unity software* and *hardware to* create effects according to the idea. At the same time, the development of trial instruments is carried out by compiling expert validation instruments and trial instruments based on relevant sources. The validation instruments that have been prepared are then validated by experts. After the application is complete and the instrument has been validated, the next process is the validation test of material and media experts using pre-designed validation instruments. If the application is valid, it is ready for testing[[37], [38].

The implementation phase is carried out with field trials to measure and identify the extent of success of *the Arabic Vocabulary application*. The test subjects in this study were students in the fourth semester of the Arabic Language Education Department. Application implementation is done by sharing trial instruments and displaying the application to test subjects. Then the test subjects use the application and assess them according to the question items on the test instrument. The implementation results are analyzed to determine whether or not the application is considered feasible by the subject.

Evaluation is carried out to make improvements or revisions to each step of the research stage. Evaluation is carried out after each stage of research after seeing the results of the implementation analysis. The evaluation of each of these stages is carried out by (1) the analysis stage, analyzing data obtained from observations and interviews that have been conducted, as well as consulting with supervisors, (2) the design stage, conducting qualitative data analysis of the product design carried out, and consulting experts, (3) the development stage, conducting data analysis from expert review questionnaires and small group trials, as well as field trials, (4) the development stage, analyzing data from the results of trials on students of the Arabic Language Education Department, and (5) the evaluation stage, carried out to produce a truly valid and feasible product.

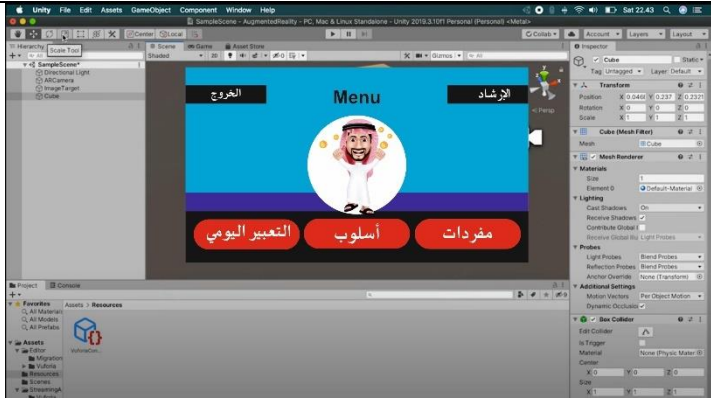## RESULTS AND DISCUSSION

1. Stages of Analysis

To develop *this Augmented Reality* application, several things can be obtained as follows::

| System Requirements	The *Arabic Uslub application is* expected to become an Augmented Reality-based dictionary that can help users improve their understanding of the Arabic language with several selected Arabic vocabulary, providing experience and knowledge of Arabic.	
Software requirements:	Unity 3D	Is an application used to develop *multiplatform games* that are designed to be easy to use. In this unity, some graphics are made at a high level. Any file format can be used with Unity. Features included in Unity 3D include rendering, asset *tracking, asset store, platform* and *physics*. The advantage of using Unity is that it is free and very *user-friendly*. However, in the use of unity, adjustments are needed that follow the *component-based style*.
	Blender 3D	Blender 3D is a computer graphics application used to produce animation with high quality. Blender 3D is different from others in the existence of open-source projects. The characteristic of open source is its open nature. Blender 3D can be used for *modelling,* texturing*, raster graphics,* camera tracking *as well as for creating interactive 3D*.
	Android SDK	Is a *tool* for application developers who want to develop applications based on Google Android. Contains quite comprehensive development tools. The Android SDK contains *debuggers*, libraries*, handset* emulators, and *tutorials*.
	Vuforia SDK	Vuforia SDK is used to make it easier for developers to create augmented reality-based applications. In the Vuforia SDK, there are several tools used, namely Android Studio and Unity 3D as explained in the point above. Vuforia SDK can only be used for iOS and Android.
Hardware requirements	In the development of *the Arabic Uslub* application using a Computer Lab consisting of 24 units	
Problems	How to make the concept of *developing Arabic Uslub* with the concept of *an Augmented Reality-based* application able to increase Arabic vocabulary for users, able to provide experience, not make users feel bored in terms of presenting features, and how to make a system that can be used by fourth-semester students of the Department of Arabic Language Education IAIN Sultan Amai Gorontalo.	
Step	1. Create an augmented reality-based Arabic dictionary of *uslub* and daily expressions that can provide knowledge 2. Creating an attractive display, easy to use, 3. The system can work properly.	
Assignment	1. The system can detect objects that have been marked 2. The system determines the appropriate Arabic translation 3. The system can name examples of Arabic pronunciation 4. The system can provide features of Arabic grammatical material 5. The system can provide features of Arabic grammatical exercises	

2. Design Phase

The design stage is carried out before the system development stage. The result of this stage is the design of an application that can answer the problems of the analysis process and has a plan related to the learning experience that will be obtained by application users. In the design phase, there are several views as will be explained below:

|	
Unity design, inside the *splash screen* there is a button button "Start / ibda'". This button serves to start all the features in the *Arabic Daily Expression* application. As seen in picture 2.	
	Picture 2. Design *Splash Screen*
Main page design, inside the main page there are menu features that contain vocabulary practice features, hints, about applications and exit buttons, as seen in figures 3, 5, 6, and 7.	
	Picture 3. Main page design
	Picture 4. *Uslub* and Vocabulary Exercises Daily Expression
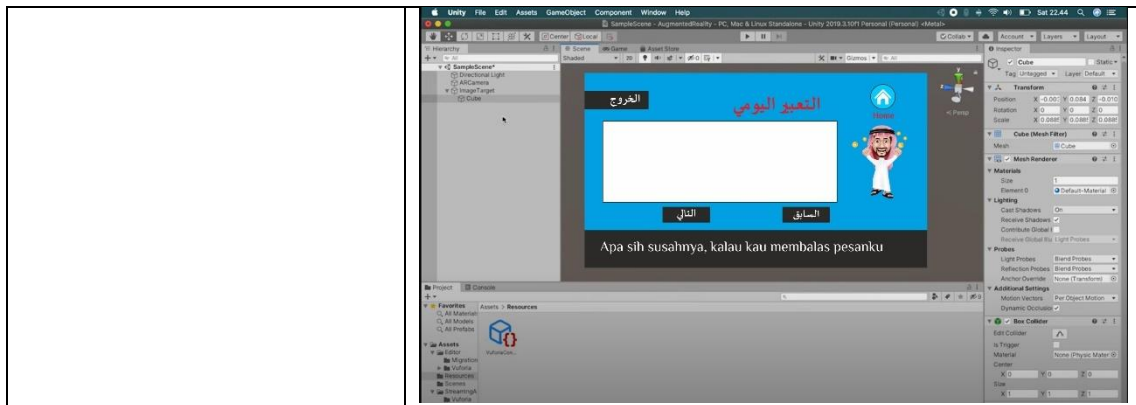
Picture 5. Application Instructions
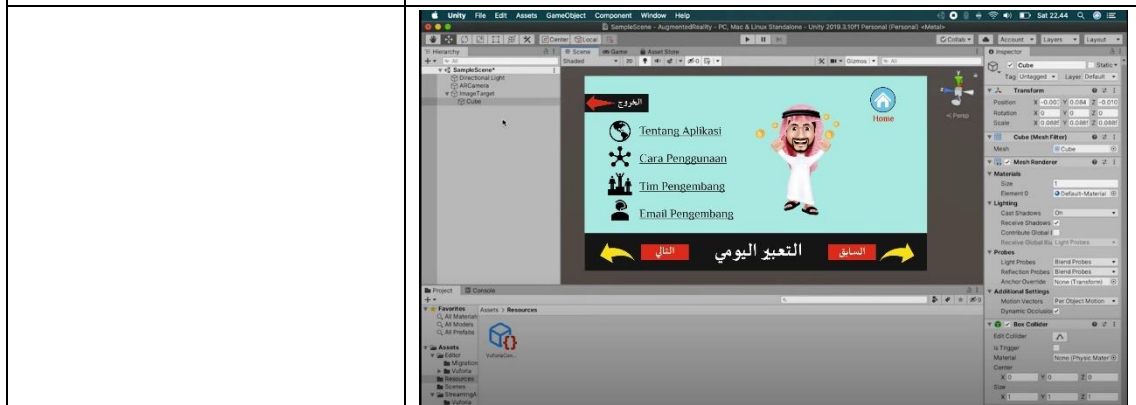
Picture 6. About the App

AR display page design, in this feature page, will appear the merger of the real world with the virtual world in the form of two dimensions or three dimensions projected in a real environment at the same time according to what application users want with mobile phones, as shown in picture 7 :
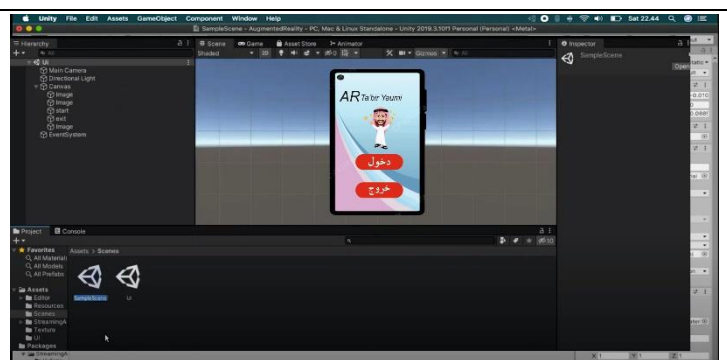
Picture 7. Display page design AR

3. Development Stage

At the development stage, the results of design development are made to be validated by material and media experts. The result of this stage is the design of applications by the rules of software information system development which will be implemented in the next stage. The results of material expert validation show that the Arabic *Uslub* application is declared very valid with the percentage shown in table 2

Table 2. Material expert validation results

No	Aspects	Percentage	Information
1	Eligibility of contents	89	Highly Valid
2	Language Eligibility	92	Highly Valid

| 3 | Eligibility of Presentation | 94 | Highly Valid |

Table 2 above shows the results of media expert validation using the Arabic Vocabulary application declared very valid with the following percentages.

Table 3. Media expert validation results

No	Aspects	Percentage	Information
1	Eligibility of Presentation	94%	Highly Valid
2	Language Eligibility	100%	Highly Valid
3	Graphic Eligibility	94%	Highly Valid

Table 3 above shows that the validation results of material experts and media experts can be concluded that the Arabic Vocabulary application is declared very valid and ready to be implemented in test subjects.

4. Implementation Phase

The implementation was carried out at the IAIN Sultan Amai Gorontalo Language Lab with the test subjects of fourth-semester students of the Arabic Language Education Department. The implementation is carried out by sharing test instruments and Arabic Vocabulary applications. Then the test subjects filled in the instrument and tried the Arabic Vocabulary application. The implementation results with details of the validation results of material aspects and media aspects are shown in Table 4 and Table 5.

Table 4. The results of the validation of material aspects

No	Aspects	Percentage	Information
1	Eligibility of contents	9	Highly Valid
2	Language Eligibility	8	Highly Valid
3	Eligibility of Presentation	9	Highly Valid

Table 5. Media aspect validation results

No	Aspects	Percentage	Information
1	Eligibility of Presentation	9	Highly Valid
2	Language Eligibility	9	Highly Valid
3	Graphic Eligibility	9	Highly Valid

From the implementation results, it can be seen that all aspects of the instrument show that the Arabic *Uslub* application is declared very valid. Comparison of the results of validation of material aspects and media aspects by experts and test subjects showed no significant difference in their assessment.

5. Evaluation Phase

At this stage, an evaluation is carried out after the application trial. In practice, the evaluation stage is carried out before the trial is carried out, namely at the development stage. After the trial stage, an evaluation is carried out based on an assessment sheet by a material expert. The evaluation aims to provide feedback to users so that it is made according to unmet needs.

CONCLUSION AND IMPLICATIONS

The need for an Arabic *Uslub* application based on Augmented Reality is necessary

considering that when learning Arabic, many people experience difficulties in terms of vocabulary and ability in delivery. Arabic *Uslub* design can be realized to speed up understanding Arabic vocabulary. The system can detect marked objects, the system determines the appropriate Arabic translation, can name examples of Arabic pronunciation, can provide features of Arabic grammatical material, can provide features of Arabic grammatical exercises. The Arabic Vocabulary application product was developed using the ADDIE model which has gone through a long process. The components in the app consist of a splash screen page, a main page and an AR display page. This research needs to be carried out further development by determining the right device, more detailed computing and making applications or websites as interfaces between users and the main database.

The implications of this study show that learning Arabic using everyday expressions can be helped by Augmented Reality as a technology that combines digital elements, such as images, sounds, and virtual objects, with the real world because the main function of Augmented Reality is to improve the user experience by adding an interactive layer of digital information with linguistic educational materials, so that language content is easier to learn.

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