

## Android-based fashion terms digital dictionary application development

Nurul Aini<sup>1</sup>, Agus Hery Supadmi Irianti<sup>1</sup>, Hapsari Kusumawardhani<sup>1</sup>, Nur Endah Purwaningsih<sup>1</sup>

<sup>1</sup>Fashion Education Study Program, Department of Industrial Technology, Faculty of Engineering, State University of Malang, Jl. Semarang 5 Malang, Indonesia

### Abstract.

There is no digital dictionary application in the fashion sector. There are books for fashion terms that cannot be carried since they are printed. An Android-based digital dictionary application can be carried easily. Hence, this research developed a digital dictionary for fashion terms based on Android. This research was conducted using the ADDIE (Analysis, Development, Design, Implementation, and Evaluation) development model. The validity test from material experts, media experts, and trials results were declared feasible. Thus, the Android-based digital dictionary application for fashion terms was feasible and can be used for teaching purposes in the fashion area.

### 1. Introduction

To date, there is no digital dictionary application in the fashion sector. There are books for fashion terms that cannot be carried anywhere. Meanwhile, an Android-based digital dictionary application can be carried easily. Some researches showed that digital dictionaries increased skills than printed dictionaries. Also, digital dictionaries are more time-efficient [1]. The android-based digital dictionary provides practical impact and effectiveness in Kanji search. Another research also stated that developing a digital dictionary is motivated by the lack of search for Civil Engineering terms because it still uses conventional books and takes a long time [2]. This statement is also supported by rapid technological advances so that student interest in using an Android-based digital dictionary increases [3]. A similar opinion declared that today's smartphone technology had penetrated all circles, including junior high school students. For this reason, efforts need to be made to utilize smartphone technology to support the learning process [4]. Based on these descriptions, this research developed a digital dictionary application for fashion terms. It is expected to help students in Fashion Design or other fashion-related areas. The fashion terms were taken from four books.

This research was developmental research. Developmental research is a process or steps to develop a new product or improve an existing product to be accounted for. This research aimed to produce new products through development. The development research in this study was the ADDIE model, which consisted of Analysis, Design, Development, Implementation, and Evaluation.

Application (software application) is a subclass of computer software that utilizes direct computer capabilities to perform a task the user wants. States that the application is software or computer programs that operate on specific systems created and developed to execute certain commands [5]. An application is software designed to perform particular tasks. In other words, the notion of an application is software created and developed for a specific purpose on computers, laptops, and smartphones.

A dictionary is a book of terms or names arranged and explains their use in alphabetical order, meaning, or translation of the terms or phrases. As mentioned by [6], digital is an electronic system that uses digital signals. Digital signals are based on discontinuous signals. A digital dictionary is a collection of terms or names that are compiled along with an explanation of their use, arranged alphabetically and explanations of their meanings, or their translation of the words or phrases using an electronic system [7]. Digital dictionaries are a demand in today's digital era. As stated by [8], processing language data has become fundamental to developing technologies in various areas of human life in the digital world.

A digital dictionary application is an application that produces various information to support the process of translating a word or sentence effectively and efficiently [9]. As [10] wrote, a dictionary is needed to find a

term with the correct translation. Current technological developments make things very easy and inexpensive. The use of smartphone technology is now very suitable to replace the printed dictionary with a digital dictionary. The digital dictionary application for fashion terms in this research uses an Android-based smartphone. It is available offline, so it can be carried everywhere and can be used anytime and anywhere.

It is beneficial to understand the fashion terms. This digital dictionary is one learning medium that can be used or used for students in the Fashion Education study program. Android application-based learning media is something new in education; this learning media is usually in the form of an application that contains material or one of the learning materials. These application products can be downloaded on smartphones and gadgets with the Android operating system, usually already available on Google Play or the Play Store. Learning media based on Android applications is a learning media product in the form of an application that can be downloaded or downloaded on an Android-based smartphone.

The Android application is classified as an electronic form of learning media because it runs on smartphones and gadgets with the Android operating system. Smartphones and gadgets are communication technologies. The development of learning media through cell phones was to create mobile learning intended for all Android phones because the Android operating system has become the most widely used system on smartphones [11]. Based on some of these understandings, learning media based on Android applications are said to be electronic media [12].

## **2. Method**

The research was developmental research or commonly called Research and Development (R&D) for fashion terms. The development of this Android-based application media used the ADDIE development model.

At the analysis stage, it was found that there was no digital dictionary for fashion terms based on Android, only in printed books that felt less effective and less efficient in its use, especially in the current digital era. Hence, it is very appropriate to make a digital dictionary based on Android.

A good design process was performed as the basis for the following development process in the design stage. This design was needed to facilitate the process of making a digital dictionary application. In this case, the design was created in flowcharts and storyboards. A flowchart is a diagram type that represents an algorithm, workflow, or process, showing the steps in graphic symbols, and arrows connect their sequences. This diagram illustrates an illustration or depiction of problem-solving. Flowcharts are used to analyze, design, document or manage a process or program in various fields. The storyboard here was a rough outline of the digital dictionary application display to overview the appearance.

The development stage in the ADDIE model contained product realization activities. In the design stage, a conceptual framework for the application was prepared. Here, the conceptual framework was realized into a product to be implemented. After the product development was completed, it was necessary to carry out an expert validation test. Media experts and material experts did the validation test. The purpose of validation was to get assessments and suggestions from media experts and material experts. Based on the validation test, revisions or improvements were made to the existing deficiencies in the application so that it could be declared feasible to continue into the implementation stage or field test.

This implementation stage was conducted in field testing because the products were revised and declared feasible by media experts and material experts. At the implementation stage, the application was tested on students from the Fashion Study Program, State University of Malang, using a questionnaire to obtain an assessment. Product trials were conducted to collect data as a basis for determining the quality and feasibility levels of the application. The obtained data from product trials were used to improve the application. The product trial consisted of a trial design, test subjects, data types, data collection instruments, and data analysis techniques. This product trial assisted researchers in improving the quality of the learning media.

The trial design was carried out once in a selected class following predetermined criteria. The subjects were Fashion Education students that consisted of undergraduate students of the Fashion Education Program and diploma students of the Fashion Design Program. For the trial, only one class was taken from each of the study programs due to time constraints and the constraints of the COVID epidemic with the total number of test subjects of 47 students. The data collection instrument in this study was a semi-closed questionnaire including several alternative answers and a comment or suggestion column. In this study, the questionnaire as an instrument was given to media experts, material experts, and students as test subjects. This study used

a Likert scale to measure the feasibility of the media. The answers to each instrument were weighted with an interval of 1 to 4 to avoid ambiguous answers. The equation to process data from material experts, media experts, and students was adapted from [13].

$$V = Tse/Tsh \times 100\% \tag{1}$$

Information:

V = Validity

Tse = Total empirical score

Tsh = Maximum total score

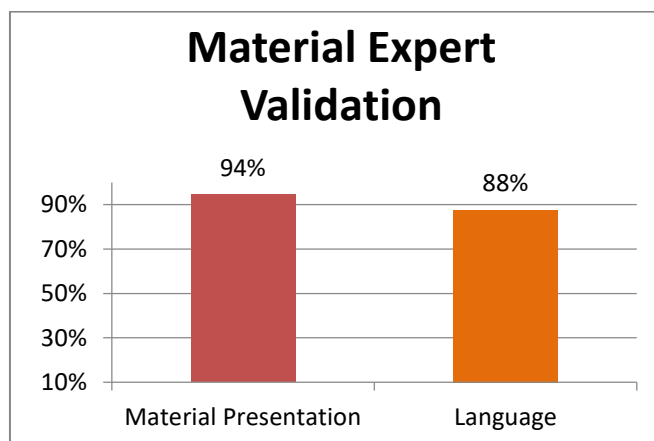
The evaluation stage was a process to analyze any shortcomings and weaknesses during the implementation stage. In addition, revisions were made based on the evaluation results through comments and suggestions from experts and students to make the developed media feasible.

### 3. Results

The validation analysis came from the data obtained through each questionnaire indicator in Table 1. The questionnaire consisted of two aspects of assessment, namely the material and language presentations. The following are the results divided according to their assessment aspects.

**Table 1.** Data analysis of material expert validation results

No	Assessment Aspect	Tse	Tsh	V-ah (%)	Information
1.	Material presentation	34	36	94.44 %	Very valid
2.	Language	14	16	87.5%	Very valid
	Total	48	52	92.3%	Very valid



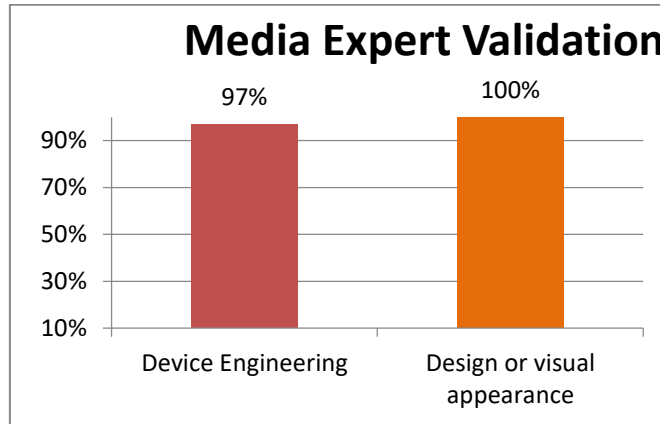
**Figure 1.** Material expert validation

In Table 1, presenting the material obtained a Total Empirical Score (Tse) of 34 out of a Total Maximum Score (Tsh) of 36. The percentage receives 94.44% based on these data, which is included in the very valid criteria. In presenting the material, 7 out of 9 indicators obtained a percentage of 100%, which was also in the very valid criteria. In addition to these data, suggestions were also received from material experts on this media. According to material experts, in general, the material was good. However, there was no written identity for the fashion term dictionary, and there were no instructions for utilization, which confused users about what to press and the output. The font color was still displayed a standard black, so it would be better if the font color were made in color to attract the users' attention.

Media expert validation was obtained from each questionnaire indicator, as shown in Table 2. The questionnaire consisted of two assessment aspects: device engineering aspect and design or visual appearance aspect. Below is the data analysis:

**Table 2.** Data analysis of media expert validation results

No	Assessment Aspect	Tse	Tsh	V-ah (%)	Information
1.	Device engineering	31	32	96.87 %	Very Valid
2.	Design or visual appearance	12	12	100%	Very Valid
	Total	43	44	97.72 %	Very Valid

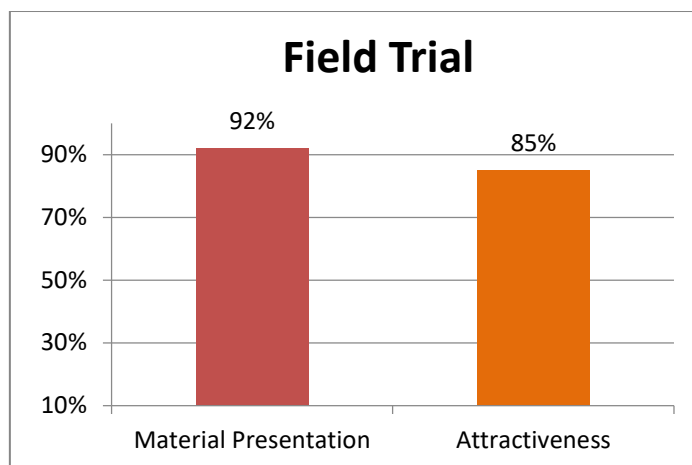
**Figure 2.** Media expert validation

In Table 2, the engineering aspect of the device obtained a Total Empirical Score (Tse) of 31 out of a Total Maximum Score (Tsh) of 32 of a percentage of 96.87% is received which was in the very valid criteria. According to these data, media experts assessed 7 out of 8 indicators on the engineering aspect and was very valid criteria, while another indicator was in the valid criteria. In addition to these data, comments were also obtained by media experts on this media. The comments stated that the media generally had efficiency, effectiveness, and a very attractive appearance so that it was feasible to be applied and implemented. Android-based fashion terms did not need any revision in the digital dictionary application media and could be directly used for data collection in field trials.

The questionnaire consisted of 2 aspects of assessment, namely the presentation of material and attractiveness. After making improvements from the advice of expert validators, it was tested. The data obtained from each questionnaire indicator is presented in Table 3. The following are the results of the field trial data analysis divided following the assessment aspects.

**Table 3.** Trial data analysis

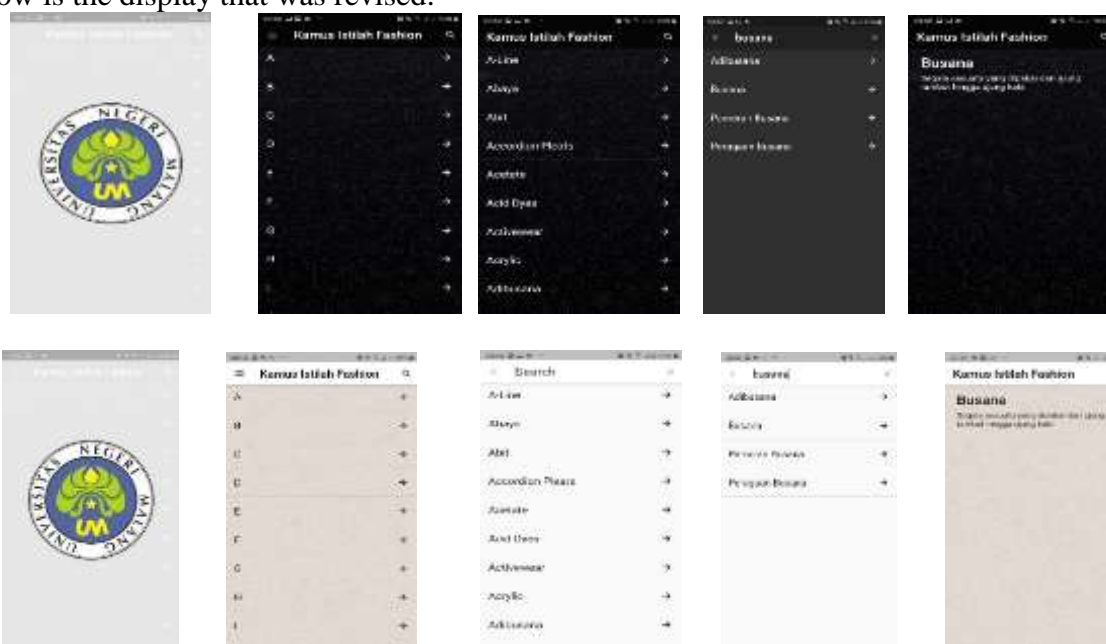
No	Assessment Aspect	Tse	Tsh	V-ah (%)	Information
1.	Material Presentation	865	940	92.02 %	Very Valid
2.	Attractiveness	639	752	84.97 %	Very Valid
	Total	1504	1692	88.89 %	Very Valid



**Figure 3.** Field trial

In Table 3, presenting the material obtained a Total Empirical Score (Tse) of 865 from the Total Maximum Score (Tsh) of 940 or a percentage of 92.02%, which entered the very feasible criteria. The following suggestions or comments were that it was generally an interesting application and helped users recognize fashion terms. The application was easy to operate, only needed a more attractive appearance. It could also be equipped with pictures or illustrations that match the fashion term to make it even more enjoyable. Based on the analysis, the Android-based digital dictionary application for fashion terms was declared valid and suitable for use as a learning medium with improvements or revisions. However, suggestions for improvement on appearance could not be made because of the limited time.

Below is the display that was revised:



**Figure 4.** Revision results of the android-based fashion term digital dictionary application in dark and light views

#### 4. Discussion

The analysis results from the material expert validation concluded that the material presentation and language aspects were included in the very valid criteria with a percentage of 92.3%. In general, the material presented followed the learning objectives. The application was beneficial for students because it helped students find, recognize, and understand difficult or unknown fashion terms so that the learning process ran smoothly and student competence could be achieved. The language was easy to understand and informative, in line with the learning needs, and right on target. Applicable and suitable fashion terms were presented in this digital dictionary application. The terms, spelling and language were very appropriate. Suggestions from material experts for the layout and background colors were performed. Based on the results of the analysis

of material expert data, the learning media product of the Android-based digital dictionary application of fashion terms was valid. It could be used in the learning process.

The data analysis from media expert validation concluded that the device engineering aspect and the design aspect or visual appearance were included in the very valid criteria with a percentage of 97.72%. In general, the application was effective and efficient since professionals made it. The application was very reliable, had a high endurance even when used many times. The selection was very appropriate for learning media. This application had a straightforward menu flow to improve material understanding. The combination of layout design and color was very attractive. The writing type was exact and easy to read. The letters were visible with the right size so that they were comfortable to see.

The analysis results from the field trial data concluded that the aspect of material presentation and attractiveness was very feasible with an overall percentage of 88.89%. In general, the production of the material on the application was very appropriate. The application was accessible on various Android-based smartphones and easy to operate due to its simple menu display. The language was clear and easy to understand. The application was also not limited by space and time because it can be used anywhere and anytime. The appearance was interesting and not tedious. It was also instrumental in learning activities because students could find complicated fashion terms, thus, making students enthusiastic about learning. Suggestions from the results of product trials stated that the display was too simple and that explanations could be added with pictures or illustrations. However, due to time constraints, these suggestions could not be implemented. Those suggestions could be used for further research. Based on the field trial data, the learning media product of the Android-based digital dictionary application of fashion terms was valid. It can be used in the learning process.

## 5. Conclusion

The results of expert validation tests and product trials showed that the Android-based digital dictionary application for fashion terms was feasible for learning media. However, this digital dictionary still needed to be refined because it was still a simple application limited to Android-based smartphones. The suggestion is that further researchers could develop a perfect Android-based digital dictionary application for fashion terms.

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