An Android-Based Vocabulary Model For Autism

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Abstract

The characteristics of autistic children that tend to focus on their world encourage the writer to conduct this research. Their communication weaknesses have become a problem that faced by parents and teachers. This fact is reasonable because autistic children often create their own ways to communicate, such as using a word that has unique meaning for them or by making their own words to convey their needs or convey their intentions. The development of the world of technology and information is considered solve the learning problems for autism community, especially to improve the mastery of a foreign language (English language). An Android-based learning software/ application or learning model create for autistic children is one of examples that the author believe can help autistic students in their communication skills through a special language learning media or method that based on mobile learning / android app. A learning innovation that aims to help communication / improve foreign language mastery in this case vocabulary for autism children is one of the language learning innovations that want to be designed through this research as a guide or learning guide for them because autistic children prefer to do something based on their own way with a media or tool that have responsive value to attracts their attention.

Keywords: *Autism; Mobile learning vocabulary; Learning Media Development*

1. Introduction

The limited learning media designed to improve language mastery for autistic children is the reason for this research to be conducted. Many of learning media that focuses solely on media learning for public schools, but there are a few learning media focused on students with special need is also as the biggest reason for the writer to conduct this research. [1] Autistic children are those who have a tendency to live in their own world. The autistic usually shows the inability to socialize, and there are some problems in physical and linguistic skill according to some sources. Every year, the number of autistic children keep increasing. It is a challenge in the educational section to provide a good learning model for them. [2] says at present time Internet use through mobile devices increasingly dominant, so e-learning will easily become mobile learning without special changes in content. Many universities around the world have performed a specific lecture using the concept of mobile learning. On the other hand, [3] argues that merging between mobile-based computing and e-learning will broaden access to resources, robust search capabilities, enrich interactions and support unrestricted access to space and time. Learning Media appeals to autistic children is one tool that makes the use of Mobile learning can improve their skill in learning foreign language.

In Aceh Province there are a number of Special Schools (SLB) where autistic children learn and improve their talents and abilities there, but there are still a few methods and learning media that can be utilized by educators to improve and succeed their teaching goal
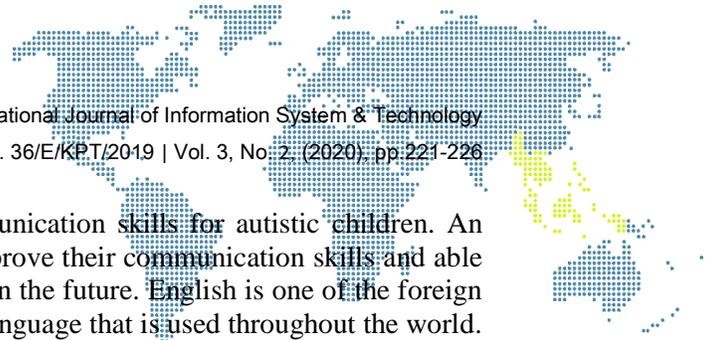
and learning activities to improve children's communication skills for autistic children. An android learning model is expected increase and improve their communication skills and able make them socialize and have well communication in the future. English is one of the foreign languages in Indonesia and it is as an international language that is used throughout the world. There are four English skills that must be mastered by students; there are speaking, listening, reading and writing. Students also need to master vocabulary as a basic skill to master these skills. In Indonesia, English is the first foreign language formally taught from junior high school to university level. Children are introduced to English early. It is hoped that they can learn English more naturally as good as they learn their native language, besides providing a basis for students to study English at a higher level. A beginner of language learners, learning vocabulary is the first step to do. Vocabulary is the first stage in learning any language. Vocabulary can be defined as a word / words that we teach in a foreign language. Vocabulary is important to be improved in the language learning process to get other competencies such as reading, writing, listening and speaking.

Vocabulary mastery is a must for someone who wants to understand reading, conversation, or writing English. Without vocabulary, it is quite impossible to achieve the learning goal. Because English is widely spoken and is the official language in most countries and it is one of the most often taught languages as a foreign language. English has been introduced since elementary school level or even in playgroups such as Playgroup, Kindergarten and elementary school level. It also must be taught in Junior high school and High school. In the current curriculum, the level of mastery of English in junior high is simply being able to use English to communicate in everyday life. This means that the aim of teaching English is the ability to speak English fluently. But, in fact, there are so many students who are not able to speak English well.

In the first years of junior high school students, learning vocabulary was the first step of language learning activities. So, good vocabulary mastery is very important for anyone who learns the language used in listening, speaking, writing and reading in addition to grammar. According to [4] multimedia has an important role in learning, therefore it is deemed necessary to develop interactive multimedia as a learning medium. Based on the description of the problems above, the writer wants to improve the quality of learning of students in mastering English through the use of mobile learning to support teaching and learning activities, especially vocabulary learning for students with autism as a support for the independent learning process.

2. Research Methodology

The method used is a method of research and development, or research and development , which means a process or steps to develop a new product or improve the model and prototype that had previously exist and can be accounted. Research and Development in education consists of ten procedures, namely: (1) Research and Information Collection, (2) Planning, (3) Developing Preliminary Forms of Products, (4) Preliminary Field Testing, (5) Main Product Revision, (6)) Main Field Testing, (7) Operational Product Revision, (8) Operational Field Testing, (9) Final Product Revision, and (10) Disemination and Implementation [5]. The scheme or flow of research and development can be seen in the picture of development models according to [5]:
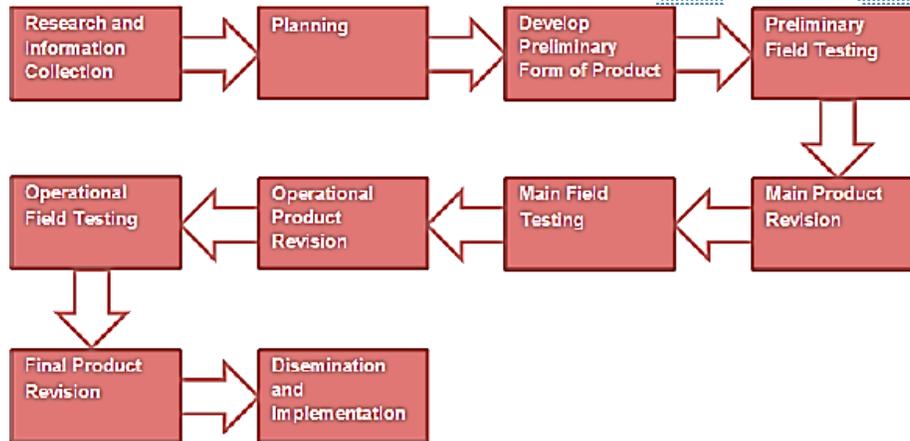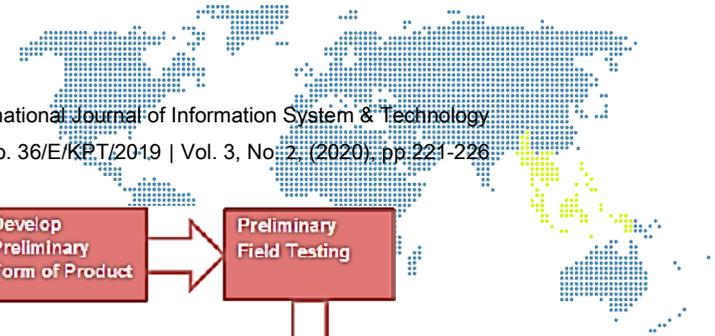
Figure 1. Flow of Research And Development

The research model used is qualitative research, it means that the data collected and used for research is not in the form of statistical data. In qualitative research, the data processed is in the form of words collected by interview methods or group discussions or literature studies. This method is widely used for software development because it can produce data according to system requirements that are more descriptive and easily implemented into software. Data collected in qualitative research is textual data in the form of words and sentences. The most widely used method for collecting qualitative data in this research is through literature studies and group discussions. In this study the initial data collection used to obtain a list of system requirements is to conduct a literature study of the Android-based vocabulary learning application, Programming Language, and Windows Operating System.

Furthermore, literature study data is a list to be analyzed between the standard android-based Vocabulary learning application that is to be achieved and the existing android-based vocabulary learning application. Furthermore, it also conducted a documentation study of Android-based vocabulary learning applications and an analysis of additional component development patterns (plugins) that can be accommodated by Android-based vocabulary learning applications. This process is needed to determine the communication strategy between this Android-based vocabulary learning application with the software developer to be developed. Whereas the final data collection after the implementation process will be carried out by making a checklist of planned and fulfilled features, as well as performance tests to obtain data on system implementation hardware requirements. Then the prototype was tested on educational institutions to get feedback in the form of questionnaires and also direct interviews. The results of the questionnaire will be entered into a tabulation and a simple calculation is carried out to obtain quantitative data on the success of the system. While the interview data will be documented and categorized to differentiate evaluations for the improvement of the program that can be done in this study, or will be used as input in subsequent studies.

3. Results and Discussion

In the process of making the application, there are several features and options on the application menu that serves as a media interface for users to interact with the application designed. Through a number of features and menu options in the application the user can carry out a series of activities that are in accordance with the purpose of application development. Here are some menus and features provided in the application:
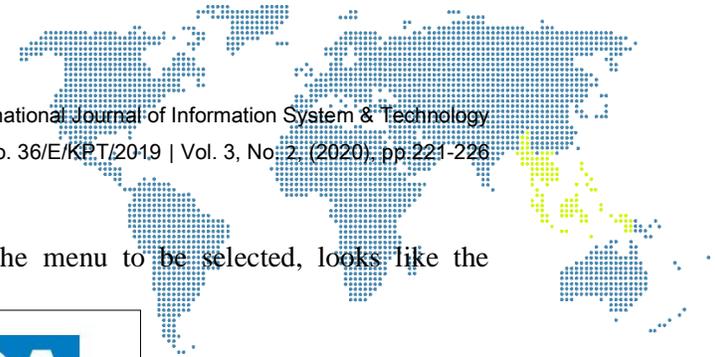
a) Main Display

The main display is the media interface for the menu to be selected, looks like the following picture 1:

Figure 2. Main Display

In Figure 2 above it can be explained that users can easily learn the vocabulary based on the alphabet that has been arranged in such a way. They only need to click on one of the letters of the alphabet in the Home application view.

b) Display of Alphabetical Categories

Display to be displayed in the alphabetical category can be seen as shown in the following figure 3:

Figure 3. Display of Alphabetical Categories

In this picture 3 all the vocabulary categories beginning with the same letters will be displayed all, so users can easily open the vocabulary they like on this module.
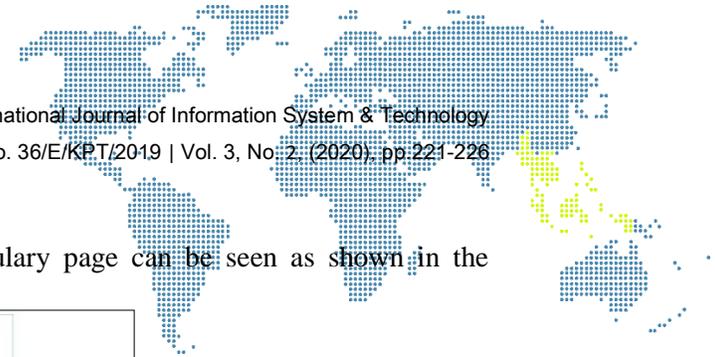
c) Vocabulary Page Views

The look that will be displayed on the vocabulary page can be seen as shown in the following figure 4:
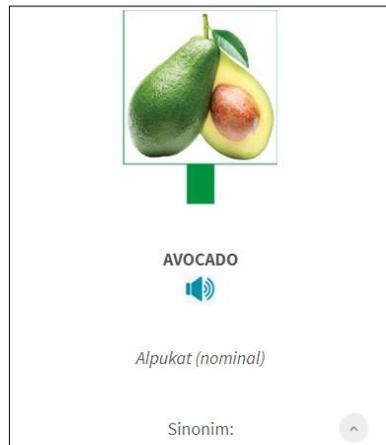
Figure 4. Display of Vocabulary Pages

On this page, users can see images of each vocabulary and hear the vocabulary pronunciation in English. They just click on the speaker image that has been designed in such a way to be attractive and user friendly.

4. Conclusion

This application has been designed to be used specifically for students with special needs (Autism) and has been tested using descriptive statistical methods with different calculation models and has run well, and can then be installed on an Android-based mobile phone. This application can facilitate the process of learning English in particular or other languages for autistic children because it utilizes technological developments in this case the android application where they have been introduced since childhood to them at home. So hopefully the language learning process for them can attract attention by displaying features and menus in the application.

References

[1]   Borg, WR, & Gall, MD (1989). Educational research. An introduction (5th ed.). White Plains, NY: Longman
[2]   Clark Quinn., 2014, M-Learning: Mobile, Wireless, In Your-Pocket Learning, Retrieved October 28, 2014, from http://linezone.com: http://linezone.com
[3]   Delphie, Bandi. (2006). Learning for children with special needs (in inclusive education settings) Prints I. Bandung: Rafika Aditama
[4]   Nyiri, K., (2002), "Towards a philosophy of learning," Wireless and Mobile Technologies in Education, IEEE International Workshop, 121,124.
[5]   Widayat, W. (2014). Development of Interactive Multimedia as an Integrated Science Learning Media on the Theme of Motion Systems in Humans. Unnes Science Education Journal Vol. 3, No.2, 537-539.
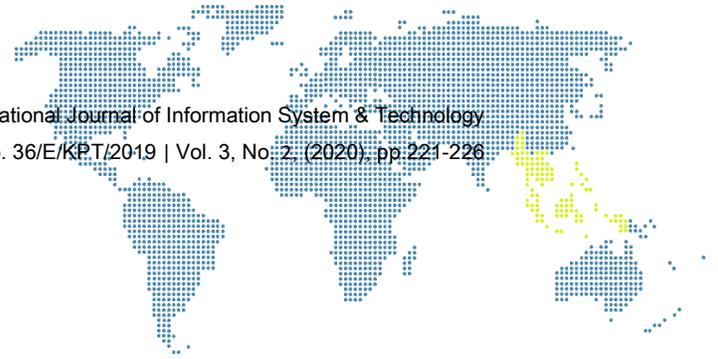
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