Android Based Application for Supporting English for Disability

Nurul Azmi[1], Dwi Maryono[2], Rosihan, A.Y.[3]

[1]The Faculty of Teacher Training and Education Sebelas Maret University Indonesia., [2]The Faculty of Teacher Training and Education Sebelas Maret University Indonesia., [1]The Faculty of Teacher Training and Education Sebelas Maret University Indonesia.

Corresponding email: nurulazmiyafiegmail.com

ABSTRACT

Supporting English Learning for student with visual impairment by utilizing smartphone application is challenging in this era. How to integrate technology to make learning more effective is what educators absolutely need. This research aims to develop English for Disability (EFORD) application on Android for Junior High School Student Grade 7 with Visual Impairment The research was developed in five phases: (1) Analysis of problems (2) Collecting information / analysis of the needs of the media as required of blind children. (3) The design phase of products such as the manufacture of flow.(4) Design validation phase form of an expert assessment. (5) Testing products phase. Three experts, include teacher of special needs education were invited to validated the product, and the average score was 84.33 percent or worthy category. For testing the effectiveness of the EFORD, 4 visual impairment students of grade 7 joined as participants. There were 2 indicators, i.e, technical and learning used for measuring the response of students. As result, each indicator scored more than 70%, which means the product effective for improving English skills of students, particularly in grammar and speaking. However, more field testing are needed to check the feasibility of the EFORD.

Keywords: learning media, application mobile, Android, visual impairment, EFORD

1 INTRODUCTION

Basic education is in the process of the formation of the next generation. In Indonesia education gets special attention thereto described in Act No. 20 of 2003 on the national education system bahwanegara guarantees fully to children in need of special education services in order to obtain good quality. The placement of students in need of special in the realm of general education and special education are currently known by the inclusive education. On the aspect of teaching, most of the students are taught a curriculum on par with students rather than disability. Inklusivitas is affected by many factors, ranging from the special characteristics of students, preparation and teaching skills, up to the amount of administrative support available (Causton & Theoharis,2013).

There are more than 13 special feature of students that affect teaching and learning activities, one of the distinctive features of students are students with impaired vision or visual impairment. Eyesight is a limitation with regard to the inability or limited ability to receive information through the sense of sight.

Based on the results of observation on Junior High chool-LB YKAB Surakarta, researchers found the fact that blind students learn material mastery Class VII against the United Kingdom language subjects have not been optimal, one on grammar/grammar and speaking english or Spanish word pronunciation of the United Kingdom. Based on interviews with grade VII, most have complained about the difficulty of distinguishing letters as well as consonants in the language vocals United Kingdom. What's with at least

the Treasury of vocabulary that they're good at. This implies the process of writing/writing language of United Kingdom.

Use of the media in the process of learning is one of the efforts to create a more meaningful learning and quality. In school SMPLB YKAB Surakarta braille reading books and listening to the teacher talk as the main United Kingdom language learning resources. In recent decades, the ownership of mobile devices (mobile devices) Androidpowered devices. The Android operating system are open source and have the capability of multitasking to run multiple applications simultaneously (Reski Rantepedang: 2012). Mobile application development is not reserved only for the normal individual, however, to individuals in need.

Mobile applications are developed with a variety of features that set apart with each individual kespesialan. For persons who are blind sound is one of the most important indicators that should be in any mobile application. With sound indicators of the disabilities visually impaired easier to access applications on Android.

Student used sense of hearing to use and access the information on a Smartphone. The Smartphone has many features, one of them a talkback feature easy access to children with limited vision.

Growing number of communities that have and use mobile devices open up opportunities of use of mobile devices in the world of education. The use of mobile devices (mobile device) in the learning process is known, as a mobile learning (m-learning) (Gorgiev, 2004). Mobile learning is a learning which enables learners (learner) do not dwell on one place. The existence of m-learning is shown as a proponent of learning that can provide the opportunity to learn the material on student controlled wherever and whenever.

Based on the exposure above the need for media innovation learning for students who are blind and so, he made the mobile application "English for Disability" based Android expected to provide ease of students in learning grammar and verbal ability students to get used to listening to the talk of using the language of the United Kingdom and can be applied in the environment. Appropriate conditions that have been described, then researchers interested in conducting research with the title "English for Learning Media Development Disability Android based on the material for English Speaking & Grammar Grade VII Blind SMPLB YKAB Surakarta".

The purpose of this research is to develop a learning and media apprised the appropriateness of language learning media United Kingdom English for the Android-based Disability for visually impaired students in SMPLB A YKAB.

2 METHODS

This Type Of Research, This research uses the types of methods of research and development (Research and Development) to produce language English for United Kingdom Disability-based Android for visually impaired students.

Research on place and time, The research was carried out on the SLB/AYKAB Surakarta addressed street HOS Tjokroaminoto No. 43, Surakarta. Time research was done gradually starting in may 2016 until June 2016. **Research Procedure**. This research procedure adapting media development of the steps written by Sugiyono. This research covers the procedure to find the potential and problems, needs analysis, product design, design validation and testing of the product. Limits for this study only up to the stage of trial products.

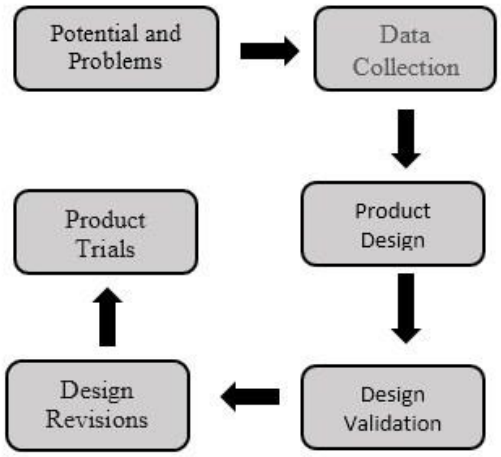

Figure 1: Research Procedure

Data Collection Techniques

Relevant and accurate data is needed to do the research, then the necessary data collection. The technique of data collection is done in several ways, namely (1) the study litertur assessment sheet (2) (3) interview (4) observation.

Data Analysis Techniques

The data type of this research is qualitative data and quantitative data. Qualitative data in the form of comments and suggestions on improvement of expert material, media experts and practitioners of learning. Quantitative data obtained from the assessment score from experts and practitioners of learning. Data analysis techniques used in this research is descriptive analysis technique by changing the data results of the average interval assessment scores.

Criteria assessment criteria based on the media interpretation of the score according to Riduwan (2012:15) with further changes, that can be seen in table 1.

Table 1. Assessment Criteria For Media Guidelines

Persentase	Assessment Criteria
0 % – 20 %	Very not worth it
21 % – 40 %	Less Worthy
41 % – 60 %	Pretty Decent
61 % – 80 %	Worthy
81 % – 100 %	Very Worthy

3 RESULT AND DISCUSSION

Stage Analysis (Analysis)

Analysis phase comprises two stages, namely the analysis of the content of the material and needs analysis. Phase analysis of the content of the material is performed to identify the material based on competency basis and dompetensi core (KIKD) United Kingdom language subjects Class VII even semester academic year 2015/2016. Subject matter that is taken is material about the grammar/grammar and speaking english.

Needs analysis consisted of two stages, namely requirements analysis, functional and non-functional needs analysis. A functional needs analysis, namely (1) the application of a sound media usage indicator fitted (2) applications provide material that is presented with audio (3) application provides multiple choice question exercise to help students to train the ability of analysis to answer the question. (4) the application provides additional material on the material covered such as vocabulary/lexicon is designed with models spelling or spelling of the language of the United Kingdom so that students can identify the letters of the alphabet in the United Kingdom based on the language of sound. (5) this application provide reinforcement material to students wherever and whenever, without having to connect to the internet.

Non functional requirements analysis aims to let the media learning developed runs in accordance with its function. Specifications (software) software for manufacturing applications, namely (1) the App Inventor 2 (2) MIT AI2.

Companion Data Collection Phase

Information materials for planning products collected from the study of literature, interviews media experts in need of special and observations to school SLB related needs analysis of the media that are suitable for children who are blind.

Stage Design (Design)

In the design phase carried out with map making navigation and storyboards. The purpose of the map navigation is to provide an explanation in each section or subsection navigation section or button on the application. The purpose is to give an explanation of the storyboard the flow of the narrative on the application.

Figure 2. Display main Menu English for Disability application

Design Validation Stage

The media has been completed, then the next validation phase do the media materials, media experts, and practitioners of learning. Validation material experts aim to find out the feasibility of the application with the results of the assessment in terms of two aspects, namely the learning aspects and aspects of the material.

Table 2. The results of the Validation by an expert Material

No	Aspects of Assessment	Percentage	Category
1	Learning	75 %	Worthy
2	Material	75 %	Worthy
Total Overall Aspect		**75 %**	**Worthy**

Based on table 2 results of validation by the material, obtained results percentage of learning i.e. 75%, while the percentage of material aspects of the results that is 75%. Based on the percentage of the results, it can be noted that the criteria of assessment categories include learning aspects and aspect categories include material worth.

Validation of media experts aim to find out the feasibility of the application with the results of the assessment in terms of two aspects, namely the display aspects and aspects of the device.

Table 3. The results of the Validation by an expert Media

No	Aspects Of Assessment	Precentage	Category
	Display	95 %	Very Worthy
2	Technical	100 %	Very Worthy
3	benefit	100%	Very Worthy
4	blind accessibility	83%	Very Worthy
Total Overall Aspect		**95 %**	Very Worthy

Based on table 3 results of validation by media, retrieved the results display aspect i.e. the percentage of 95%, the percentage of the technical aspects of obtaining a percentage of 100%, the percentage of benefit gained a percentage of 100% and the percentage of blind accessibility aspects of 83%. Based on the percentage of the results,

it can be noted that the display aspect of the assessment criteria, technical accessibility and expediency, the blind child categories include very feasible.

Validation practitioners study aims to find out the feasibility of the application with the results of the assessment of this aspect of the matter and the aspect of learning.

Table 4. The results of the Validation by practitioners Learning

No	Aspects of Assessment	Precentage	Category
1	Material	81 %	Very Worthy
2	Learning	85 %	Very Worthy
Total Overall Aspect		**83 %**	**Very Worthy**

Based on table 4 validation results by learning practitioners, the material retrieved results percentage of aspects namely amounting to 81%, whereas the results of the learning aspect i.e. the percentage of 83%.

Based on the percentage of the results, it can be noted that the material aspect of the assessment criteria including category is well worth the learning aspects and including the very worthy category.

Based on validation by experts and practitioners of learning then produce a decent product used for children who are blind.

Trial phase media design has been validated by experts will go on trial stage Media tested to learners Class VII SPMLB YKAB. Learners are given the opportunity to use the application English for Disability (EFORD) obtained as percentages in Figure 2.

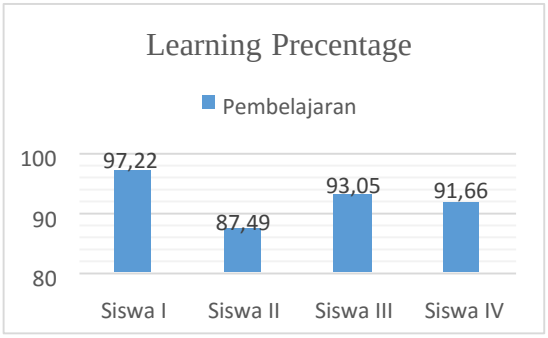

Figure 2. The percentage of Students

English for Disability (EFORD) obtained as percentages in Figure 2. Figure 2. The percentage of Students Tested according to responses to learners use learning media is very beneficial for children to make, because disability access to learning easier and more explanation of the content of the grammar is very easy to understand. According to one of the students who are blind Class VII, he was very enthusiastic towards English for Disbility media (EFORD) because of the application of media innovation EFORD is a United Kingdom-based language learning Android first she tried and very user friendly

for students who are blind. The response is supported by the statement of one of the students who provide input to be able to deploy these applications that can be used not only for Android yet, get on all operating systems like Symbian

4 CONCLUSION

Based on the results of research and discussion, then the conclusions to be drawn, namely (1) the development of the application of "English for Disability" Android based on United Kingdom language subjects for the students classes VII SMPLB YKAB Surakarta with competence basic grammar/grammar and pronunciation of the language of the United Kingdom. for children who are blind have successfully developed through 5 stages: the first stage, the analysis of the problem, through observation and interview. The second stage, collecting information as material product planning/analysis of the needs of the visually impaired children according to needs of the media. The third phase, the design phase of a product in the form of the creation of the flow map navigation and storyboards. The fourth stage is the validation of the design in the form of expert assessment against the media are developed. The fifth stage of the test product in the form of an assessment of the application by students who are blind. (2) the feasibility of adobe flash-based applications have a 75% assessment of expert material with category viable, 95% of the media expert with the category of very decent, and 83% of practitioners of learning with a very worthy category. Based on the weakness of the study of the end product, then the advice that can be given to research and development of the next steps is as follows: (1) material development need to be widely in addition to grammar and pronunciation material language United Kingdom United Kingdom language subjects in grade VII SMPLB YKAB Surakarta (2) should the speed of sound in the material (3) slowed the restyling or page button adapted to the needs of students who are blind.

ACKNOWLEDGMENT

The authors would like to thank Sugini, Kansha Infaharaini H, and Agus Efendi.

REFERENCES

Efendi, Y, (2012), Introduction To The Child Disability Psikopedagogik, 43, Bumi Aksara, Jakarta.

Friend, M. & William, D.(2015), Education Towards Inclusion, 10-23, Pustaka Pelajar, Yogyakarta.

Junaedi, E.(2013), Influence Of Mobile-Based Electronic Learning Modules to increased student learning outcomes on technology subjects information and communication. Journal of University Education research results, Indonesia (2), 30-31.

For a journal paper: *Shih*, R., Lee, C., & Cheng,T., (2014), Effects of English spelling learning experience through a mobile LINE APP for college students, *INTE 2014*, 174(1), 2634-2638.

Moreno, I., & Vermulen, A. (2014). Using VISP (VIdeos for SPeaking), a mobile app based on audio description, to promote English language learning among Spanish

students: a case study. 15th International Conference of the Spanish Association of Language and Literature Education, 178(1), 132-138. \

Makhsunah, Y. (2011). Pengembangan Media Audio Interaktif Untuk Meningkatkan Keterampila Berkomunikasi Pada Mata Pelajaran Sains Bagi Siswa Tunanetra Kelas II Di SDLB YPAB Surabaya. *Jurnal Mahasiswa Teknologi Pendidikan*. 1(2), 15-17.