Implication of the use of Android-based App Pie application on children counseling subject

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Abstract. The purpose of this study was to discuss the development of an Android-based App Pie application as one of the learning media for students of the Welfare Education Study Program. In addition, this study also aims to measure the improvement of student’s learning when using this application. The research method uses a type of development research with the ADDIE (Analyze, Design, Development, Implementation, and Evaluate) approach to test the effect of the application. The media feasibility test is carried out by material experts and media experts. After learning media is considered feasible, a large group test consists of 30 students who have taken the Child and Guidance Course. The effectiveness test assessment instrument in the form of a questionnaire using the Guttmann scale, to measure 1) Media Functions, 2) Media Images, 3) Media Colours and, 4) Media Posts. The result of the Children Counselling Product effectiveness according to the media accept with 4 test indicators yielding an average of 84.07% with a very good category.

1. Introduction

App Pie is a smartphone application that is released that uses Operation System (OS) Android, in addition to iOS, Fire OS, Window Phone, and Blackberry. Android is a system that operates on Linux which is developing amid other OS and has grown rapidly in comparison to other OS [1,2]. Most smartphone users are people who have criteria for ages 19 to 29 years [3,4]. If you look at the age criteria, students can be said to be included in these criteria. That is, smartphones with Android OS are widely used among students especially for cellular learning media.

App Pie is one of the software or application based on Android that can be opened and stored on smartphones with any brand as long as it has an internet network other than Mode, etc. so that it can be called online learning or mobile learning [5]. That is, mobile Learning is a term to learn involving the use of a mobile device especially the Android-based App Pie application for child counseling courses [6].

How is mobile learning used in higher education in relation to existing learning theories? Mobile learning has encouraged learning “on the move,” using mobile devices in educational settings [7]. Technology in education is known as learning technology [8]. With the existence of the internet and new technology, it is a solution that can be used as a learning media in each university [9]. Universitas
Negeri Jakarta (UNJ) as a university that prints graduates as educators require students to create media for learning using advanced technology.

App Pie is an Android-based software or application that can make learning media easier because it has an easy-to-understand user interface and complete equipment, this is because App Pie has many features that can be used and chosen to make the desired program. In addition, the existence of the App Pie application as mobile learning can make students more practical and easier to understand the contents of the material anytime and anywhere through mobile gadgets, cellphones/smartphones [10, 11].

What are the implications of using learning media with this App Pie application? Improved learning outcomes cannot be separated from the attractiveness of learning media that can attract students to learn from the aspect of media display. In other words, the continuity of learning must be supported by learning media as a learning resource that attracts students’ interest through a combination of images, text, colors, and videos, and animation [12,13].

The material contained in the App Pie application contains guidance and childcare material. In the application contains some material, namely an explanation of; What is meant by family? How is parenting in the family? and What are the types of parenting in the family? Thus, this study will answer the question of the implications of using an Android-based App Pie application that is devoted to aspects of media assessment, namely the test of the effectiveness of the display of learning media. This learning media is very useful to help manage to learn more interesting and helping students to learn Child counseling subject anywhere anytime [14].

2. Method
This research method uses research and development with the ADDIE learning model approach because this model is a form of learning media product development in addition to learning models, learning strategies, learning methods, and teaching materials. The media feasibility test is carried out by material experts and media experts. After learning media is considered feasible, a large group test consists of 30 students who have taken Guidance and Child Care courses. The effectiveness test assessment instrument in the form of a questionnaire using the Guttman scale, to measure 1) Media Functions, 2) Media Images, 3) Media Colors and, 4) Writing aspects.

3. Results and discussion
Good learning media are learning media that can attract students’ interest through the display aspects of learning media. In the development of children's counseling learning media, researchers used 4 indicators to assess the effectiveness of aspects of the display of learning media. The four indicators include 1) Media Functions, 2) Media Images, 3) Media Colours and, 4) Writing aspects.

The results of the assessment of the effectiveness of the display aspects of the learning media look like in the table below:

| No | Indicator | Sub-indicator | Percentage of result | Result criteria |
|----|-----------|---------------|----------------------|----------------|
| 1  | Media function | Practicality of media | 89 | Very good |
|    |            | Conformity of learning objectives | 90.3 | Very good |
|    |            | Ease of information in Media | 87 | Very good |
| 2  | Media images | Drawing attractiveness | 76 | Good |
|    |            | Suitability of picture media | 75 | Good |
|    |            | Suitability of characteristics | 75 | Good |
|    |            | Image composition | 75 | Good |
| 3  | Media color | Color suitability | 86 | Very good |
|    |            | Attractiveness | 84 | Very good |
|    |            | Composition | 80 | Very good |
|    |            | Cohesiveness | 80 | Very good |
Table 1. Cont.

| Writing aspects | Suitability type | Size compatibility | Clarity | Legibility |
|-----------------|------------------|---------------------|---------|------------|
| 4               | 90               | 89                  | 85      | 95         | Very good | Very good | Very good | Very good |

First, Media function consists of 3 sub-indicators, namely Practicality of media, conformity of learning objectives, and Ease of information in Media. The average value of the indicator of the Media function indicator is 88.77% (Very good). The highest value of the sub-indicator for the "media function" indicator is the sub-indicator "suitability of learning objectives" by 90.3% (very good). This is due to the fact that the contents of the material are contained in this application are in accordance with the learning objectives [15], and learning media is a tool to convey the content or learning materials; especially child counseling. And the lowest value of the sub-indicator for the “media function” indicator is the sub-indicator "ease of information in the media" and 87% (very good). Ease of information in media can be improved by communication between teacher and student. It means teachers should correctly understand the relative advantages of mobile learning and communicate its benefits to students [16].

Second, Media image have four sub-indicators, namely Drawing attractiveness, the suitability of picture media, the suitability of characteristics, and image composition. The average value of the Media image indicator is 75.25% (Good). The results of the assessment for this indicator can be said reliably because the Percentage of Agreement (PA) values obtained are greater or equal to 75% [17]. The highest sub-indicate of media images is drawing attractiveness (76%). The low average value of this indicator is compared to other indicators because this media is still minimal in the use of images. Therefore, for the development of this media, it is necessary to add images that can facilitate students in learning material through visuals, especially visuals in the form of animation. Animated media images can make students happy to use media for learning resources.

Third, media color has four sub-indicators, namely color suitability, attractiveness, composition, and cohesiveness. The average percentage of this indicator is 82.5% (Very good). Color suitability as a sub-indicator of "media color" has the highest percentage value of 86%. This is in accordance with the results of the study that empirically for effective functions that color can affect individual emotions in learning and improve their understanding [18]. Color compatibility can also increase student’s interest in learning. If they are interested, they will use this learning media in the future. This is in accordance with the results of the literature study who have conducted a literature review of 30 from 2005 to 2013 [19]. In other words, the presence of color in this media can also increase students' interest, motivation for learning and achievements of learners [20-23].

Fourth, writing aspects have four sub-indicators, namely suitability type, size compatibility, clarity, and legibility. The mean value of the "writing aspect" indicator is 89.75% (very good); The sub-indicator "readability" has the highest average value of 95%. The importance of attending to and adjusting the font size and font type to facilitate effective retention of text information on learning [24]. In another word, the judgments of learning (JOLs) is significantly influenced by the font of size [25].

4. Conclusion

Product Effectiveness test results of Child counseling with the results of the assessment of the effectiveness of the display aspects of the learning media application was assessed based on the media aspect consisting of 4 indicators yielding an average of 84.07% (Very good) with a very good category, this average value was increased again by making product improvements. To increase the implications for this product, it is better to test the effectiveness of the material and language. Additionally, how the success of learning using this product also needs to be seen through the level of knowledge of students before and after using this learning media.
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References
[1] Kharisma D, Irzal M and Widyati R 2018 Rancang Bangun Aplikasi Makharjul Huruf dan Tajwid Berbasis Android Sebagai Penunjang Pembelajaran Tahsin Tilawah J-KOMA : Jurnal Ilmu Komputer Dan Aplikasi 2
[2] Kidi N, Kanigoro B, Salman A G, Prasetio Y L, Lokaadinugroho I and Sukmandhani A A 2017 Android Based Indonesian Information Culture Education Game Procedia Computer Science 116 99–106
[3] Pew 2017 Smartphone ownership and Internet usage continues to climb in emerging economies [Online] retrieved from http://www.pewinternet.org/fact-sheet/mobile/
[4] Poushter J 2016 Smartphone ownership and Internet usage continues to climb in emerging economies [Online] Retrieved from http://www.pewglobal.org/2016/02/22/smartphone-ownership-and-internet-usage-continues-to-climb-in-emerging-economies/
[5] Jacobson D, Chapman R, Ye C, Van Os J. A Project-Based Approach to Executive Education. Decision Sciences Journal of Innovative Education 2017;15:42–61. doi:10.1111/dsji.12116.
[6] Crompton H, Burke D and Gregory K H 2018 The use of mobile learning in PK-12 education : A systematic review Computers & Education 123 53–64
[7] Han I and Shin W S 2016 The use of a mobile learning management system and academic achievement of online students Computers and Education 102 79–89
[8] Januarisman E and Ghufron A 2016 Pengembangan Media Pembelajaran Berbasis WEB Mata Pelajaran Ilmu Pengetahuan Alam Untuk Siswa Kelas VII Jurnal Inovasi Teknologi Pendidikan 2016 3 166
[9] Popovici A and Mironov C 2015 Students’ Perception on Using eLearning Technologies Procedia - Social and Behavioral Sciences 180 1514–9
[10] Traxler J 2010 Will Student Devices Deliver Innovation, Inclusion, and Transformation? Journal of The Research Center for Educational Technology 6
[11] Cavus N 2011 Investigating mobile devices and LMS integration in higher education: Student perspectives Procedia Computer Science 3 1469–74
[12] Amalia L and Doriza S 2018 Effectiveness of the Utilization of the Learning Media in Preventing Drug Abuse for Teachers in Grade 4–6 of Elementary School KnE Social Sciences 13 1224
[13] Doriza S and Sunawar A 2015 Pengembangan Sumber Belajar Ekonomi Keluarga Berbasis CD Interaktif Jurnal Ilmu Pendidikan Universitas Negeri Malang 21
[14] Azaria IV, Doriza S and Hasanah U 2019 Tingkat Ketertarikan Anak Usia 10-12 Tahun Dalam Menggunakan Media Pembelajaran Tentang Pencegahan Penyalahgunaan Narkoba JKKP (Jurnal Kesejahteraan Keluarga Dan Pendidikan) 6 54–9
[15] Muhidin A 2017 Mengajar Efektif: Pendekatan Berpusat Pada Mahasiswa. 1st ed (Tangerang Selatan: Unpam Press)
[16] Kim H J, Lee J M and Rha J Y 2017 Understanding the role of user resistance on mobile learning usage among university students Computers and Education 113 108–18
[17] Borich G D and Martin D B 2003 Observation skills for effective teaching. 4th ed. (Merrill/Prentice Hall)
[18] Plass J L, Hayward E O, Homer B D and Um E 2013 Emotional design in multimedia learning: Effects of shape and color on affe EBSCOhost
[19] Alrasheedi M, Capretz L F and Raza A 2015 A systematic review of the critical factors for success of mobile learning in higher education (university students’ perspective) Journal of Educational Computing Research 52 257–76
[20] Doriza S, Sunawar A and Muhidin A 2018 Inovasi Pembelajaran Ekonomi Keluarga Berbasis
Website Di Program Studi Pendidikan Kesejahteraan Keluarga Prosiding Seminar Nasional UNS Vocational Day

[21] Salman A G 2017 Interactive Educational Games For Children In Learning Alphabets in Android Based Library Hi Tech News 34

[22] Sung Y T, Lee H Y, Yang J M and Chang K E 2019 The Quality of Experimental Designs in Mobile Learning Research: A Systemic Review and Self-Improvement Tool Educational Research Review 14

[23] Ahmed S and Parsons D 2013 Abductive science inquiry using mobile devices in the classroom Computers and Education 63 62–72

[24] Motoki Y 2006 The Effect of Font Size on the Retention of Text Information Presented on Computer Display and on Paper PSYCHOLOGIA -An International Journal of Psychology in the Orient 49 89–100

[25] Hu X, Li T, Zheng J, Su N, Liu Z and Luo L 2015 How much do metamemory beliefs contribute to the font-size effect in judgments of learning? PLoS ONE 10 1–11