Developing Instructional Multimedia based on Android Application on Nationality Learning Materials toward Students of Senior High School

Hujair Faizan[1], Siti Masitoh[2], Bachtiar S Bachri[3], Zinnurain[4]

[1,2,3]Educational Technology, Pascasarjana, UniversitasNegeri Surabaya
Coresponding Email : dasanjorong@gmail.com

Abstract:

This study aims to develop android-based learning multimedia on nationality material and determines the perception of class X high school students and teachers toward the results of the development of developed learning multimedia. This research usedResearch and Development(R&D) method and descriptive qualitative method for perception. The results of this study showed that students' perceptions toward the development of application-based learning multimedia on nationality material obtained an average score of 3.82 with a decent category. The results of the assessment of nationality teacher score 4.23 in the very feasible category. In conclusion, the use of android-based multimedia is feasible to be used in nationality material of learning activities.

Keywords: *Development, Instructional Multimedia, AndroidApplication, Perception.*

INTRODUCTION

Nowadays, the development of technology is not denied any more toward the ease of people's lifestyle and learning context. The advanced technology is very influential on the progress and development of educational quality.One result of the rapid development of technology today is the use of smartphones with the Android operating system for everyone, including students. This is considered to have a positive impact on supporting the school in managing educational institutions, improving the quality of learning, and increasing learning activity(Falahudin, 2014).Mobile technology has introduced new, novel environment that can be capitalized to further enrich the teaching and learning process in classrooms (Hanafi, 2012).

Technological development has created breakthroughs in the context of learning. In the development process, students often contact devices of mobile communication and internet being a new trend that have possibility to organize mobile learning (m-learning). Because of m-learning, students should not always attend in any learning process. Besides that, students can access the learning material anytime and anywhere (Astra, 2015).

The use of technology in learning can be integrated through the media as a learning device.Learning media is one of the strategic tools that can improve the quality of learning. Learning media gives students experiences to further explore learning activities (Leow& Neo, 2014). Besides, the use of instructional media makes it easy to deliver material and overcome the limitations of the teacher in the classroom.According to Calimag, *et.al.* (2014) the use of android-based media is the implementation of learning styles in the 21st century. The use of android-based media can increase the effectiveness of learning (Subiyantoro, 2018).

Nationality learning activities is carried out to improve the ability of students in expressing the reality of life that exists in society

through a series of community activities. Nationality competence is actually not only useful to support the ability to state, but also to add and enrich quality insights and personalities for students in their environment.Some of the obstacles experienced by students include: 1) the inability of students to produce ideas about nationality; 2) Nationality learning activities are less attractive to students; 3) theuse of learning media is not attractive enough for students; and 4) the teacher becomes the dominant source in the class so students are more focused on what the teacher conveys (teacher center).Supporting these observations, Rahayu (2015) states that when learning to write nationality, students feel confronted with a tough job. Learners find it difficult to put ideas or ideas into the lines of nationality, lack an adequate vocabulary, are less able to choose words correctly and lack understanding of how-to string words into a nationality.

Previous research related to perceptions of instructional media have been carried out among them by Najichah, et.al (2018). Other relevant research conducted by Nugroho et.al (2017) conducted research on students' perceptions of blog-based learning media on mathematics. The previous relevant studies put more emphasis on students' perceptions of the development of media books and blogs in the field of science.Whereas in this research focuses on how to develop android-based media and know the perceptions of students and teachers of the results of the development of multimedia learning based on android applications to understand nationality material.

In an effort to improve the quality of nationality learning activities, teachers must be able to exploit the potential for very rapid technological development in order to be able to create attractive, independent, effective, and efficient learning resources. This is in accordance with the Regulation of the Minister of Education and Culture of the Republic of Indonesia number 22 of 2016, to create an atmosphere and learning process that is interactive, fun, motivates students and actively participates, teachers are expected to be able to utilize various learning resources so that the potential of students can be developed maximum. Support the use of technology in learning is not only to facilitate students in understanding the subject matter, more than that, the use of technology can encourage students to be more active and constructive in the learning process.

RESEARCH METHOD

This study usedResearch and Development (R&D) method in developing products and also qualitative descriptive aiming at describing the perceptions of students and teacherstoward the results of developing android-based multimedia learning products on nationality material. At the development stage, it is focused on getting scores based on categories from experts, entrustedexperts namely media experts and material experts. Expert judgment is an indicator of the necessary improvement.

Table 1
Category of Validity

Criteria	Category
$3.5 \leq M \leq 4.0$	Very Valid
$2.5 \leq M \leq 3.5$	Valid
$1.5 \leq M \leq 2.5$	Pair Valid
$M < 1.5$	Not valid

This study used a questionnaire as the instrument to review experts and perceptions of students and teachers. The source of the data was consisted of 30 students of class X IPS 2 Islamic Public High School (MAN)of East Lombok Regency and Indonesian subject teachers through the application of multimedia learning based on android applications.

Furthermore, the data obtained were analyzed by using descriptive data analysis through explaining the data and verifying the data needed. The result of the results was obtained in

the form of students' and teachers' perceptions of android-based learning multimedia products on nationality material for class X students. The data was also taken from the results of students' and teachers' questionnaires, and then analyzed and converted into qualitative form using a Likert scale.

Table2: Converting perception scores

IntervalScore	The	Category
>X +1,80Sbi	X>4,20	Very
+0,60SBi<≤ +0,60Sbi	3,40<≤ 4,20	Worthy
-0,60Sbi<≤ +0,60Sbi	2,60<≤ 3,40	Pretty
-1,80Sbi<≤ -0,60Sbi	1,80<≤ 2,60	Not Worth It
≤ -1,80Sbi	≤1,80	Very Less

RESEARCH FINDING

Based on the data validation and the testing of developed multimedia, it was found that the results of the validation test of media experts and material experts from the developed mediaare obtained as follow.

Table 3
Description of result of the Experts assesement for media

Indicator	Mean of Score
Construction	3.61
Content	3.73
Language	3.83
Mean	3.72

Based on Table 3, it showed that the Indicator is categorizedas very valid, because every aspect of each type of device reaches an average value that exceeds 3.50. In addition, the validators concluded that the media that had been developed were found with minor revisions. In particular, there were still aspects that needed to be improved or added, according to experts' recommendations.

The following table is the recapitulation data toward students' perceptions of the development of android-based learning multimedia products on nationality material.

Table4: Recapitulation of Student Perception Questionnaire Results

No.	Subjects	Aspect Display	Materials	Learning	Numbers	Average
1	S.1	25	1	22	6	3,
2	S.2	24	1	22	6	3,
3	S.3	25	1	21	5	3,
4	S.4	26	1	21	6	3,
5	S.5	25	1	21	6	3,
6	S.6	26	1	22	6	3,
7	S.7	22	1	22	6	3,
8	S.8	24	1	23	6	4
9	S.9	24	1	22	6	3,
10.	S.10	25	1	23	6	3,
11.	S.11	24	1	22	6	3,
12.	S.12	23	1	22	6	3,
13.	S.13	24	1	21	6	3,
14.	S.14	23	1	21	6	3,
15.	S.15	22	1	23	6	3,
16.	S.16	25	1	21	6	3,
17.	S.17	24	1	21	5	3,
18.	S.18	23	1	22	6	3,
19.	S.19	25	1	22	6	3,
20.	S.20	23	1	23	6	3,
21.	S.21	24	1	23	6	3,
22.	S.22	25	1	23	6	3,
23.	S.23	23	1	23	6	3,
24.	S.24	26	1	23	6	4
25.	S.25	25	1	22	6	3,
26.	S.26	26	1	23	6	4
27.	S.27	23	1	22	6	3,
28.	S.28	24	1	21	6	3,
29.	S.29	25	1	24	6	3,
30	S.30	25	15	23	63	3,93
	Numbers	776	484	709		1969
	Average	4,04	3,78	3,69		
	Average Overall	3,84				
	Category	Worth				

Source:Data on students' perceptions processed, 2019.

Based on the results of data recapitulation toward the students' perception table above, it is showed that the students'perceptions of the development of android-based learning multimedia on nationality material for class X showed that students' perceptions of the display aspects of android-based learning multimedia obtained a score

of 4.04 if it is converted into feasible categories. While on the material aspects of multimedia based on Android learning, the average score was 3.78. And the score results from material aspects if it is converted into a feasible category.For the aspects of learning, getting a decent category by obtaining an average score was 3.69. Based on these results, the overall view, material, and learning aspects were 3.84. The following is the data recapitulation of teachers' perceptions of the development of android-based learning multimedia on nationality material.

Table5: **The Recapitulation Results Toward the Teachers' Perception Questionnaire**

	KI	Mate				
G	2	8	4	1	2	1
G	2	8	5	1	2	1
G	2	1	4	1	2	1
T	6	2	1	3	6	5
A	4	4	4,	4,2	4,	4,3
ave						
ra						

Source:Data on the results of teacher perceptions are processed,2019.

Based on the data recapitulation toward the teachers' perception table above, the teacher's perception of the development of android-based learning multimedia on nationality material for students of class X can be explained in six aspects, namely 1) aspects of the core relevance competencies and basic competencies; 2) aspects of organizing material; 3) language aspects; 4) aspects of the content of the material; 5) evaluation aspects; and 6) aspects of multimedia display.

In the aspect of the core relevance competencies and basic competencies, the average score was 4.13. While, the aspect of organizing the material got an average score of 4.16.And the language aspect got a score of 4.33. The content aspect got an average score of 4.22. The evaluation aspect got an average score of

4.26. And the last aspect was the aspect of multimedia display got a mean score of 4.33.

Students' Perception

Based on the results of the data recapitulation above, students' perceptions of the learning media for writing nationality based on android get an overall average score of 3.84 (X). The overall average is in the range of ≤ 4.20 which means that it is in the feasible category. The feasibility of a multimedia display is an effort to improve the quality of learning through attractive visuals. Visual media such as pictures can increase students' interest in learning. The use of image media with an attractive appearance both visually and audio visually can overcome students' difficulties in learning (Lazuardi&Murti, 2018; Poniman, 2018).

In the appearance aspect, the highest score was compared to the other two aspects. It showed that the visual display of media could increase students' interest in learning. Students' perceptions of multimedia display were assessed based on indicators consisting of text clarity in multimedia applications based on Android applications, clarity of button icons on applications, App color attractiveness, appropriateness of image display, and text color and application background. In the material aspects of multimedia learning, it got an average score of 3.78 with a decent category. Eligibility was assessed based on indicators consisting of clarity of material exposure, clarity in language use, material easily understood, and the level of difficulty of the material. Of the four indicators, students stated that the material content aspect was suitable for use in learning.

The third aspect was the learning aspect. These aspects are assessed based on learning activities by using multimedia based on Android applications. The learning aspect got the lowest average score of 3.69 although included in the feasible category. The feasibility was assessed from 6 indicators which include the media

supporting students to learn independently, the media increase knowledge through learning activities, clarity in each instructional instruction, multimedia enhance understanding, conduct evaluations learning, and providing learning motivation.

Teachers' Perception

The relevance KI and KD aspect of learning multimediagot an average score of 4.66 with a very decent category. The feasibility assessment on this aspect consisted of 5 indicators which included the suitability of core competencies and basic competencies, the suitability of learning objectives of KD, the accuracy of learning materials of KD, the suitability of the nationality material selection, and the suitability of the learning material objectives. The relevance aspect of CC and BC aims to align CC and KD objectives and learning material so that learning can be achieved in accordance with learning objectives.

The relevance aspect of KI and KDwas supported by the aspect of organizing the material which consisted of the material coverage to achieve basic competence and material clarity in nationalitywriting. Based on these two indicators, the aspect of organizing the material was obtained an average score of 4.13 which was included in the feasible category. The material organizing was presented through the use of language that is good and right so that to support these aspects are also assessed through aspects of the use of language. In the aspect of language use, it is assessed with indicators in the form of ease of understanding material through the use of language. The feasibility of using language obtained a score of 4.33 which was included in the feasible category.

Teachers' perceptions toward the aspects of the content was obtained an average score of 4.22 and categorized in the very feasible category. The feasibility of the material content aspect was based on three indicators which were in the form

of the truth of the concept of nationality material, the diversity of nationality examples presented in multimedia, and clarity in the nationality analysis exercise. In addition, to support the achievement of learning objectives through multimedia based on Android applications, there was an evaluation of the evaluation aspects or exercises on multimedia. The evaluation aspect obtained a mean score of 4.26 in the very feasible category. The feasibility of the evaluation was assessed from six indicators in the form of clarity of instruction in the nationality writing exercise, clarity of instructions in the exercise of the question exercise, the relevance of the questions to competence, the diversity of the types of questions, and the level of difficulty of the exercise questions.

The last aspect of teachers' assessment of android-based multimedia on nationality material was the aspect of multimedia visual display. The display aspect gained a score of 4.33 with a very decent category. In this aspect, it was assessed based on four indicators in the form of accuracy of text and image display, appropriateness of font selection in the application, accuracy of image selection, and attractive media design. Based on the six aspects above, the teachers' perception toward multimedia based on Android applications on nationality material obtained an overall average score of 4.23. It showed that the teachers' assessment toward the results of the development of multimedia based on android applications on nationality material was appropriate to be used in learning activities.

CONCLUSION

This part presents the final stage of the research which concluded that the students' perceptions toward multimedia based on Android applications on nationality material were assessed in terms of appearance, material aspects, and learning aspects in the feasible category. The teachers' perception toward android-based learning multimedia development on nationality

material was assessed from the aspects of the relevance of core competencies and basic competencies, aspects of organizing material, aspects of language, aspects of material content, aspects of evaluation, and aspects of multimedia display included in the very feasible category.

REFERENCES

[1] Ahmar, Ansari, and Abdul Rahman.(2017). "Development of teaching material using an Android." *Global Journal of Engineering Education* 19.1.

[2] Astra, I. Made, HadiNasbey, and AdytiyaNugraha. "*Development of an android application in the form of a simulation lab as learning media for senior high school students*." Eurasia Journal of Mathematics, Science & Technology Education 11.5 (2015): 1081-1088.

[3] Calimag,J.N.,Mugel,P.A.,Conde,R.S.,&Aquino,L.B.(2014).*Ubquitouslearningenvironment usingandroidmobileapplication*.International Journalof Research inEngineering&Technology,2 (2), 119-128.

[4] Falahudin,I.(2014).Utilization of Media in Learning.*JournalLingkarWidyaiswara*, (4), 104–117.

[5] Hanafi, HafizulFahri, and KhairulanuarSamsudin. "Mobile learning environment system (MLES): the case of Android-based learning application on undergraduates' learning." arXiv preprint arXiv:1204.1839 (2012).

[6] Ismawati,E.,Santosa,G.B.,&Ghofir,A.(2016).Development of Learning ModelsIndonesian Literature Based on character education in high school / vocational school.*Metasastra*, *9*(3),185–200. https://doi.org/DOI:10.26610/metasastra.2016.v9i2.185-200

[7] Leow,F.T.,&Neo,M.(2014).Interactivemultimedialearning:Innovating classroom education in aMalaysian university.*Turkish Online Journalof Educational Technology*, *13*(2), 99–110. Retrieved from http://www.tojet.net/articles/v13i2/13211.pdf.

[8] Najichah, A.F., Nuryatin,A., &Mulyani, M. (2018).Educators 'and Students' Perceptions on the Development of Fantasy Story Books with Moral Value for Grade VII Middle School Students.*JP-BSI(JournalPendidikanBahasadanSastra Indonesia)*, *3*(2), 58-65.

[9] Nugroho,A.A.,Putra,R.W.Y.,Putra,F.G.,&Syazali,M.(2017).Blog development as a medium for learning mathematics.*Al-Jabar: JournalPendidikanMatematika*, *8*(2), 197-203.

[10] Poniman.(2018). Efforts to Improve the Ability to Read Through Media Pictures Card Games.*JournalKIBASP(KajianBahasa, SastraDan Pengajaran)*, *2*(1),48–58. https://doi.org/https://doi.org/10.31539/kibasp.v2i1.441

[11] Rahayu, S.(2015). Improvement of Citizenship Writing Motivation and Skills with Image Media in Junior High School Students. *27*(2), 126–133. https://doi.org/https://doi.org/10.23917/kls.v27i2.4481

[12] Satinem, J.(2018). DevelopmentofTeaching Materials ofPoetry Writing UsingPicturesfortheElementary Students.*AIAC*,*9*(3).Retrievedfrom http://journals.aiac.org.au/index.php/alls/index

[13] Subiyantoro, S. (2018).Android-basedInstructionalMediaDevelopmentProcedure to Enhance Teaching and Learning in TheAgeofDisruption4.0.In *InternationalConferenceonApplied Scienceand Engineering (ICASE2018)* (Vol.175,pp.152–155).Atlantis Press. https://doi.org/https://dx.doi.org/10.2991/icase-18.2018.41