JHSS (Journal of Humanities and Social Studies)
https://journal.unpak.ac.id/index.php/jhss
Volume 08, Number 01, Page 298-301
e-ISSN: 2598-120X; p-ISSN: 2598-117X

DEVELOPMENT OF SMART APPS CREATOR INTERACTIVE LEARNING MEDIA TO IMPROVE STUDENT LEARNING OUTCOMES IN GRADE 4 ELEMENTARY SCHOOL SCIENCE LEARNING

Ulum Rohma Sari[a*)], Sumarmi [a)], Susiswo [a)]

[a)] *Universitas Negeri Malang, Indonesia*

[*)]*Corresponding Author: ulumrohmasari99@gmail.com*

Article history: *received 09 August 2023; revised 12 September 2023; accepted 04 October 2024* *DOI:https://doi.org/10.33751/jhss.v8i1.9436*

Abstract. This research is Research and Development (R&D). Development is carried out by referring to the Borg and Gall model with stages of information gathering, planning, initial draft development, expert feasibility trials, product revision resulting from expert trials, small group trials, revision of small group trial results, field trials, revisions and product improvements. This development research aims to analyze the results of the learning media that have been developed, analyzing the use of interactive learning media that have been developed in improving student learning outcomes. The instruments used in this research were learning media validation, a media practicality assessment questionnaire and student pretest and posttest questions. Media eligibility criteria are seen from the practical aspects of ease of use of media and effectiveness in improving student learning outcomes. Based on the results of the research analysis, it can be concluded that the smart apps creator learning media is suitable for use and meets practicality criteria. Based on the pretest and posttest results, it was concluded that learning using smart apps creator media was very effective in improving student learning outcomes.

Keywords: Interactive Learning Media, Smart Apps Creator, Economic Activities, Learning Results

I. INTRODUCTION

With advances in technology, learning can be done anywhere and at any time without being limited to the classroom. Technology can be used as an effective and interactive learning medium. The use of interactive learning media will help the effectiveness of the learning process and convey the message of the content of the subject (Sofan Amri, 2013). There is quite a bit of research that shows that media can show its importance in helping educators convey learning material quickly and more easily for students to understand (Asnawir, 2002). Interactive learning media will be more interesting and no longer teacher-centered, but student-centered learning.

Based on the results of observations of the learning process at one of the schools in Malang, namely SD Gracia Nusantara Malang, only 35% of students were actively involved in the learning process while 65% were only passive and not enthusiastic about participating in learning. This affects students' cognitive abilities, namely KKM completion which has not yet reached 100% in one of the learning subjects, namely Science and Technology. Data regarding 65% of students who are only passive and not enthusiastic about learning was obtained from filling out a questionnaire which shows that the reason they are reluctant to actively participate in learning is because learning activities are monotonous and use a lot of lecture methods.

Based on the results of the description of the condition of class IV students at Gracia Nusantara School, Malang, teachers should not be monotonous and dominate in learning. Technology-based learning media that can be developed by teachers such as interactive multimedia which combines text, images, sound, animation, video and others to convey learning messages. Digital video and animation can also be used as technology-based learning media. Apart from that, various learning applications can also be implemented and developed by teachers such as quizizz, mentimeter, powtoon, smart apps creator and others. Learning media with smartphones can display media consisting of text, graphics, images, photos, audio, video and animation interactively. The concept of using this media can be used at close and long distances. Close distance learning can be used by students and teachers during the learning process in class. One learning application that can be used on a smartphone is the smart apps creator. This application can display text, graphics, images, video and audio as well as animations interactively.

At Gracia Nusantara School in Malang, the school actually uses technology-based learning media such as PowerPoint, Moodle, videos and images. Even though we have used technology-based learning media, it is still not optimal and varied. This was stated by one of the teachers, "Learning already uses technology, but not many teachers have developed technology-based interactive learning media in

Volume 08, Number 01, Page 298-301
e-ISSN: 2598-120X; p-ISSN: 2598-117X

learning materials. Therefore, researchers chose economic activity material to be studied in more depth.

Based on the explanation above, learning requires the development of interactive learning media, one of which is maximizing the use of technology. Technology-based interactive learning media will make it easier for students to understand the material they are studying and can develop their cognitive abilities.

The results of other research related to the development of interactive learning media show that the products developed can make learning easier, more fun and effective in improving learning patterns. Other research related to the development of interactive learning media using smart apps creators on economic activity material has never been carried out. Existing research related to the use of smart apps creators focuses on materials such as thematic learning, mathematics, Indonesian, letter recognition and others.

Therefore, researchers intend to carry out research and development of interactive learning based on smart apps creator to improve students' cognitive abilities in economic activity material.

II. RESEARCH METHODS

This research is development research which refers to the model proposed by Borg and Gall which contains several steps such as planning, initial draft development, expert feasibility trials, product revision resulting from expert trials, small group trials, revision of test results. try small groups, field trials, product revisions and improvements.

The instruments used in this research were questionnaires and tests. The questionnaire is used to determine the validation results of media experts and material experts as well as student responses to the validity of learning media. while tests are used to measure the effectiveness of learning media. This is done to meet the eligibility criteria for a learning media, namely valid, practical and effective (Plomp & Nieveen, 2014).

Data from validation and questionnaires were analyzed using quantitative data analysis techniques, namely descriptive statistics. Meanwhile, the pretest and posttest data were analyzed using qualitative descriptive analysis techniques. Calculation of the results of filling in the validation sheet uses the average value formula.

$$P = \frac{\sum x}{N} \times 100$$

Information
P = Percentage gain from validators
$\sum x$ = Total score
N = Total ideal score

The categories of questionnaire analysis results to determine the validity and practicality of the smart apps creator learning media use the Likert scale category formula as in the following table.

Table 1. Media practicality Likert scale

No	Tingkat Pencapaian	Kualifikasi	Keterangan
1	90%- 100%	Very good	No need to revise
2	75%-89%	Good	Revised as necessary
3	55%-64%	Not Good	Much revised
4	0-54%	Very not good	Totally revised

Meanwhile, to determine the effectiveness of the product, the pretest and posttest results were analyzed using a scale Likert.

Tabel 2. Likert scale of product effectiveness

No	Tingkat Pencapaian	Kualifikasi	Keterangan
1	90%- 100%	Very good	Very effective
2	75%-89%	Good	Effective
3	55%-64%	Not Good	Effective enough
4	0-54%	Very not good	Less effective

The data analysis technique used is descriptive analysis technique which aims to process data originating from media experts and material experts. Data analysis techniques are carried out by grouping information from qualitative data such as responses, criticism and suggestions for improvement that have been provided in the questionnaire. This data is presented to make it easier to understand what happened, plan further work based on what has happened and what has been understood.

III. RESULT AND DISCUSSION

This research on the development of interactive learning media using smart apps creator uses the Borg and Gall model which contains several steps such as planning, developing an initial draft, expert feasibility trials, product revisions resulting from expert trials, small group trials, revision of small group trial results, field trials, product revisions and improvements.

a. Collection of information

The information collected relates to the curriculum that applies at Gracia Nusantara School. The curriculum used is an independent curriculum with science learning outcomes for grade 4 elementary school students, namely that students can recognize how to obtain necessary goods and understand needs and desires with the use value of goods and priority scales. Also, students can explain the flow of economic activities in buying and selling activities as an effort to fulfill human needs.

In addition, information was collected regarding facilities and infrastructure in schools that have adequate laboratories. So that students can use these facilities in learning activities. The school also has an adequate internet network.

b. Planning

In this research, interactive learning media smart apps creator will be developed with a general product description as follows:

Volume 08, Number 01, Page 298-301
e-ISSN: 2598-120X; p-ISSN: 2598-117X

1) Content specifications
Aspects of the material displayed in interactive learning media include the definition of economic activity, the process and flow of economic activity, examples of economic activity and the principles of economic activity. At the final stage, a quiz was given to find out the extent of the improvement in student learning outcomes.
2) Construct
Development of interactive learning media smart apps creator in the form of an application (.exe) (apk) that can be installed on an Android cellphone, as well as in HTML form. So it doesn't take long for students to use the media. Users can open HTML links to open in internet windows.

c. Learning Media Development
In developing smart apps creator learning media, there are several parts starting from the cover, user manual menu, homepage menu, learning objectives menu, concept map menu, economic activity material menu, quiz menu, bibliography menu, and developer profile menu along with supervisor profile.

d. Expert feasibility testing
The feasibility test for interactive media development products is carried out by experts regarding media appearance and product development materials.

e. Field Trials
Field trials were carried out on grade 4 students at SD Gracia Nusantara Malang.
1) Below are the test results of the practicality of the Smart Apps Creator learning media product.

Tabel 3. Media Practicality Questionnaire by users

No	Aspek		Indikator	Skor
1.	Material	a.	Material is easy to understand	63
		b.	Get new knowledge after using the smart apps creator	66
2.	Appearance	a.	The design of the smart apps creator is attractive	65
2.	Application	a.	Easy to use application	67
		b.	Clarity of instructions for using the application	64
		c.	Easy to use application	69
3.	Effects for users	a.	Learning to use the smart apps creator is fun	67
		b.	Be enthusiastic while learning with the smart apps creator	65
		c.	Learning with the smart apps creator doesn't make me bored quickly	67
Total Skor			**593**	
Rata-rata Persentase			**94%**	

The calculation above shows that the practicality test results obtained an average score of 94%. These results show that the interactive media developed is included in the "Very Practical" category and can be used by students.

2) Data on the effectiveness of learning media
Data on the effectiveness of interactive media is obtained from learning results or evaluation scores. Learning outcomes are taken from learning results before and after students use interactive media. Field trials before using interactive media, students are asked to work on pre-test questions to measure students' abilities. After students use interactive media as learning media, students are also asked to work on post test questions available on learning media. The following is the presentation of the pre-test and post-test results from the diagram below.

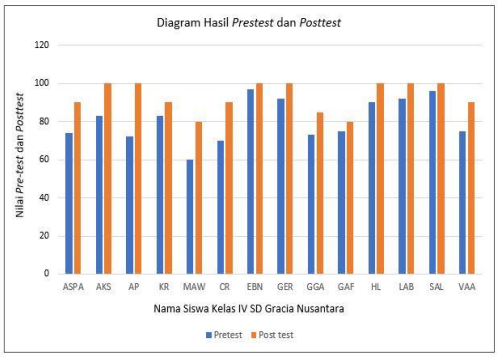


Figure. 1 Diagram of pretest and posttest results

The results of the diagram in Figure 4.2 above show that out of 14 students, the number of students who got a score below the KKM, namely 75, can be seen from the pretest and posttest results. During the pretest there were still 7 students who had not completed the KKM score of 75. Meanwhile, from the posttest results, all class 4 students got a score above 75. So the data above shows that the learning media is effective to apply because the learning results show 100% completeness.

IV. CONCLUSIONS

Based on the results of design and development, a product has been produced in the form of digital-based learning media, in this case the smart apps creator application. The media developed has quite good quality through analysis by media experts and material experts. Based on the results of the analysis above, it is concluded that the learning media, in this case the smart apps creator application developed, meets the practicality criteria and is suitable for use with slight revisions. Based on the pretest and posttest results, it was concluded that learning using smart apps creator media was very effective. It is hoped that further research can carry out

Volume 08, Number 01, Page 298-301
e-ISSN: 2598-120X; p-ISSN: 2598-117X

extensive tests and distribution tests so that we can determine the effectiveness of the product being developed.

REFERENCES

[1] S. Alwi, "Problematika Guru Dalam Pengembangan Media Pembelajaran," *Itqan*, pp. 146-165, 2017.

[2] S. H. Nabilah, "Analisis Kemampuan Kognitif Peserta Didik Dalam Menyelesaikan Soal Momentum dan Impuls," *JIPPF*, pp. 1-7, 2020.

[3] A. S. Sadiman, Media Pendidikan: Pengertian, Pengembangan dan Pemanfaatannya, Jakarta: Rajawali Pres, 2014.

[4] S. E. L. D. L. d. R. a. S. James D. Smaldino, "Instructional Technology and Media for Learning," *Upper River (New Jersey)*, 2008.

[5] W. Sanjaya, Strategi Pembelajaran Berorientasi Standar Proses Pendidikan, Jakarta: Kencana, 2014.

[6] Hardianto, "Media Pembelajaran dalam Pendidikan Agama Islam," *Hikmah jurnal pendidikan islam*, pp. 1-20, 2016.

[7] B. a. usman, Media Pembelajaran, Jakarta: Ciputat Press, 2002.

[8] M. Abdurrahman, Anak Berkesulitan Belajar, Jakarta: Rineka Cipta, 2021.

[9] N. Vidayanti, "Analisis Kemampuan Kognitif Siswa Kelas VIII SMP Negeri 11 Jember Ditinjau Dari Gaya Belajar Dalam Menyelesaikan Soal Pokok Bahasan Lingkaran," *Kadikma*, p. 1, 2017.

[10] M. Huda, Model-model Pengajaran dan Pembelajaran, Yogyakarta: Pustaka Belajar, 2013.

[11] Sugiono, Metode Penelitian Kuantitatif, Kualitatif dan R & D, Bandung: Alfa Beta, 2018.

[12] L. d. K. Anderson, Kerangka Landasan untuk Pembelajaran, Pengajaran, dan Asesmen (Revisi Taksonomi Pendidikan Bloom). Pustaka Pelajar., Pustaka Pelajar, 2010.

[13] E. (. Baharuddin & Wahyuni, "Teori Belajar dan Pembelajaran," *Ar-Ruzz Media*.

[14] W. &. G. (. Borg, "Educational Research: An Introductional (Eight edit).," *Pearson Education, Inc.*

[15] Daryanto, Media Pembelajaran, Gaya Media, 2016.

[16] C. d. S. Kustadi, Media Pembelajaran Manual dan Digital, Ghalia Indonesia, 2013.

[17] Munir, Multimedia Konsep dan Software dalam Pendidikan, Bandung: Alfabeta, 2012.

[18] N. Sudjana, Penilaian Hasil Proses Belajar Mengajar, Remaja Rosdakarya.

[19] R. Prakoso, "Pengembangan Media Pembelajaran Berbasis Aplikasi Smart Apps Creator," *Universitas Jambi*.

[20] Saluky, "Pengembangan Bahan Ajar Matematika Berbasis WEB dengan Menggunakan WordPress," *Jurnal Eduma 5*.

[21] M. Subekti, "Developing Interactive Electronic Student Worksheets Through Discovery Learning And Critical Thinking Skills During Pandemic Era," *Mathematics Teaching-Research Journal*, pp. 137-174.

[22] Sudhana, Media Pengajaran, Sinar Baru Algensindo.

[23] Sugiono, Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R & D, Alfabeta.

[24] M. Abdurrahman, Anak Berkesulitan Belajar, Jakarta: Rineka Cipta, 2021.

[25] S. Alwi, "Problematika Guru Dalam Pengembangan Media Pembelajaran," *Itqan*, pp. 146-165.

[26] Hardianto, "Media Pembelajaran dalam Pendidikan Agama Islam," *Hikmah jurnal pendidikan islam*, pp. 1-20.

[27] J. D. Smaldino, Instructional Technology and Media for Learning, Upper River (New Jersey).

[28] S. Nabilah, "Analisis Kemampuan Kognitif Peserta Didik Dalam Menyelesaikan Soal Momentum dan Impuls," *JIPPF*, pp. 1-7.

[29] Sadiman, Media Pendidikan: Pengertian, Pengembangan dan Pemanfaatannya, Jakarta: Rajawali Pres, 2014.

[30] Sanjaya, Strategi Pembelajaran Berorientasi Standart Proses Pendidikan, Jakarta: Kencana, 2014.

[31] Usman, Media Pembelajaran, Jakarta: Ciputat Press, 2002.

[32] N. Vidayanti, "Analisis Kemampuan Kognitif Siswa Kelas VIII SMP Negeri 11 Jember Ditinjau Dari Gaya Belajar dalam Menyelesaikan Soal Pokok Bahasan Lingkaran," *Kadikma 1*.