Development of Educational Game Media for Learning the Beautiful Theme of Togetherness Based on Bondowoso Local Wisdom "Bandabasah" in Elementary School Learners

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Abstract: Educational games are games that have educational content. The purpose of this research is to describe the process of development and the results of educational game media products on learning the theme of Beautiful Togetherness based on bondowoso local wisdom. The research design used is the research development research Research Base Development (R&D) model Borg and Gall. The research was conducted on students of class IV SDN Dabasah 01 Dabasah, Bondowoso with a study of 80 learners. Data collection is carried out with interviews, tests of learners' learning outcomes, and questionnaires (student response questionnaires). Data analysis techniques used in this research are dectriptif data analysis through validation sheets, student responses, and learners' learning outcomes. Data analysis results obtained a product validation score of 91.3% classified as a very decent criteria, product use trial results obtained a percentage of 97% with a very high definition of interpretation, relative effectiveness test results of 64.1% with high effectiveness interpretation, student response test results obtained a percentage of 98.6% with very high interpretation definition. Based on the analysis of data obtained in the study can be concluded that the media of educational games based on local wisdom Bondowoso "Bandabasah" is valid and effective to be utilized as a learning medium.

Keywords: media development, educational games, local wisdom

1. INTRODUCTION

Curriculum learning 2013 requires learners to think integratedly between authentic, holistic, meaningful, and active. These demands become one of the foundations for educators to choose and use learning media that can channel the stimulation of thoughts, feelings, attention, inspiration, and everything that can stimulate learners to be excited while learning. This is confirmed in Permendikbud No. 67 in the Regulation of the Minister of Education and Culture No. 103 of 2014 that the learning process in the 2013 curriculum uses a saitifical approach, implemented in its menaing, observing, communicating and reasoning activities.

The learning process that utilizes learning media based on Information and Communication Technology (ICT) makes educators as facilitators of Rusman, (2013: 64) which means that educators are not the only source of learning for learners but learners can learn anytime and anywhere by utilizing information technology without relying on an educator in school. According to Gagne (in Pratama, 2019) Smooth learning is influenced by several aspects, including facilities, methods, materials, infrastructure and others, to support the effectiveness of the learning process when educators deliver teaching materials to learners. The thing that determines the success of learners in learning is to understand the 2013 curriculum based on character education. This curriculum is a new curriculum issued by the Ministry of Education and Culture RI.

Learning media is everything that can be used in teaching and learning activities that are useful to channel learning materials (messages) so as to stimulate the thoughts, attention, feelings, and interests of learners in the daryanto learning process (2016: 5). The purpose of learning media is that the learning media has the goal to facilitate

communication in the learning of Smaldino et al (in Suryani et al 2018: 9).

Based on the results of interviews and observations on November 19, 2020 with the fourth class guardian at SDN Dabasah 01 Bondowoso, data was obtained that educators do not yet have a learning medium on the theme of beautiful togetherness effectively. There are several types of learning media that are utilized in learning. Learning media utilized in online learning is a mobile learning-based learning medium or multimedia learning media in the form of educational games with multimedia format Nalinda (2018). Educational games are games that have educational content. This educational game aims to attract the attention of learners to learning materials by playing, so that learners learn with a feeling of pleasure and easier to understand the learning materials presented by Dani (in Hikam 2015).

Research relevant to this research is research conducted by Vitianingsih (2016) shows that interactive multimedia media charged with educational games is developed effectively, practically, feasible, and interestingly in the learning process of elementary school learners. Furthermore, development research by Hikmatyar (2015) media Education Game "Indonesiaku" shows validity and worth using. In addition, there is also a development study by Fatimatuzahro (2021) showing the results of asik mathematical comic media developed valid, practical, and have differences in the results of learning control classes and experimental classes.

Research on the development of learning media with the title "Development of Educational Game Media for Learning The Beautiful Theme of Togetherness Based on Bondowoso Local Wisdom in Students of Class IV SDN Dabasah 01." The formulation of the problem in this study is

how the process and results of the development of educational game media for learning the theme of Beautiful Togetherness based on local wisdom Bondowoso in students Class IV SDN Dabasah 01. The purpose of this study is to describe the process and know the results of the development of educational game media for learning the theme of Beautiful Togetherness based on local wisdom Bondowoso in students Of Class IV SDN Dabasah 01.

RESEARCH DESIGN

The research was conducted on students of class IV SDN Dabasah 01 Bondowoso lesson year 2021/2022 in odd semesters with research subjects of 80 learners, including 30 learners for the control group, 30 learners for the experimental class, and 20 learners for the use trial group. This research is a development research "Research and Development (R&D)" that produces, validates, and tests products in the field of Masyud education (2016: 223).

The steps of this study there are 10 stages but this study carries out up to the eighth stage, namely the effectiveness test, k because in the eighth stage it has given scientific responsibility and empirical evidence to what has been studied. Preliminary research is conducted to look for references, Know the problem, and consult the problem with an expert. Product development planning is carried out for the creation of product development research proposals. Initial product design development was done to produce learning media products in the form of educational game software "Bandabasah" using the iSpiring application and Microsoft Power Point. Product design validation is done to assess the effectiveness of the educational game media software design "Bandabasah." Initial product design revisions were made to improve the educational game media software "Bandabasah." Use trials are carried out to find out the educational game media software "Bandabasah" developed is worth testing in the next stage or not. Product design revisions were made to improve the educational game media software "Bandabasah." Effectiveness trials are conducted to find out the effectiveness of the product externally and the availability of competence according to the learning media.

Data collection in this study uses interview methods, learning outcome tests, and questionnaires of learners' responses. Aspects assessed are validation obtained from the educational game media "Bandabasah," the results of the use trial obtained from the questionnaire of the student's response, the product effectiveness trial obtained from the test of the learner's learning results, and the percentage of student response obtained from the questionnaire. The following is a formula used to analyze validation data, usage trials, effectiveness trials, and percentage of learners' responses.

Product validation is carried out by 2 media expert validators and 1 material expert validator gives a score of 1-5 on the questionnaire consisting of 20 questions. The scores of the three validators were changed to a scale of 100 with the following formula (Masyhud, 2016:243).

$$\text{Valpro} = \frac{srt}{smt} x100$$

Information:
Valpro: Validity of the product
Srt: rill score achieved
Smt: maximum score achieved

2.1 Analysis of Usage Trial Results

Analysis of usage trials using data collection intrusions in the form of cheklist questionnaires. In the questionnaire there is a chek list of 10 questions., each point there is a yes and no option. The data obtained is analyzed using the following formula.

$$Percentage\ of\ Learners\ Response = \frac{A}{B} x\ 100\%$$

Information:

A: Learners give a positive response

B: The number of all learners

2.2 Product Effectiveness Trial Data Analysis

The value of learners' learning outcomes is data on the results of the t test using the Independent Sampling t-test. Here's rurmus to count them.

$$t = \frac{M_2 - M_1}{\sqrt{\frac{\sum x_1^2 + \sum x_2^2}{N\,(N-1)}}}$$

information:
M1: Average grade of group X1 (experimental group)
M2: X2 group average value (control group)
X1: Devinition of each X1 value from the X1 average
X2: Devinisi any X2 value of the X2 average
N: Number of sample/research subjects (Masyud, 2016:382)

The next stage is to test the effectiveness of the product with relative effectiveness (ER) to find out the magnitude or small level of effectiveness when compared to the previous product. Here is a formula for finding relative effectiveness.

$$ER = \frac{MX_1 - MX_2}{\left(\frac{MX_1 + MX_2}{2}\right)} x100\%$$

Description:
ER: The relative effectiveness rate of experimental group treatment compared to the control group's work.
MX1: Average different control classes
MX2: Average of experimental classes (Masyhud, 2016:384)

2.3 Percentage of Student Response

Percentage of the results of the student response is utilized to know the response of learners to the learning media. The percentage of learners' responses can be calculated using the following formula.

$$Percentage\ of\ Student\ Response = \frac{A}{B} x\ 100\%$$

Description:
A: Learners give a positive response
B: The number of all learners

RESULTS AND DISCUSSIONS

The design of learning media development in this research is the Research and Development (R&D) borg and Gall research design which has 10 stages. In this research is only done until the eighth stage, namely the effectiveness test, because in the eighth stage has given scientific responsibility and empirical evidence to what has been studied.

Preliminary research is conducted in a 3P (Paper, Place, and Person) way. Paper, Based on the 2013 curriculum teaching book analysts the theme of Beautiful Togetherness class IV has been well presented. However, there has been no discussion of local wisdom, especially the local wisdom of Bondowoso. Place, , there are constraints on the limitations of learning materials if learners observe directly in Bondowoso Square, so that the need for learning media that can overcome the limitations of learning materials, space, and time. Person, conduct guidance on product planning and development. Go to the material expert, consulting the material used in educational game media.

Tahapan perencanaan dan pengembangan produk pada penelitian ini dicurahkan dalam bentuk proposal penelitian. Propoal penelitian pengembangan berisikan hal-hal sebagai berikut: (1) judul penelitian, (2) rumusan masalah penelitian, (3) tujuan dan manfaaat penelitian, (4) kajian pustaka, (5) prosedur penelitian, serta instrumen penelitian yang dibutuhkan.

The initial product development stage is carried out in accordance with the activities that have been obtained during previous observations. The next thing to do is product planning that includes learning material determination activities, making arrangements of learning materials, collecting materials (text, animation, video, and instrument music) according to needs, editing using photoshop, composing materials (text, animation, video, and instrument music) on Microsoft Power Point and iSpiring software, changing the html format in android form using the 2 apk builder website application. Products produced in development research in the form of android application educational games. Product planning is tailored to the needs of learners so that learners have learning motivation in the learning process.

Validation results that have been provided by 3 validators, then analyzed to test the feasibility of educational game media developed. Data results and validation analysis by validators with the following results obtained.

$$Valpro = \frac{srt}{smt} x100$$
$$= \frac{274}{300} x100$$
$$= 0,913 x100$$
$$= 91,3\%$$

The overall validation result was obtained a percentage of 91.3%. The percentage value if changed in qualitative form can be concluded that the educational game media developed belongs to a very decent interpretation.

The results of the use trial that has been obtained using google form-based student response questionnaires use as many as 20 learners. Data questionnaire response of learners by obtained the results of the following analysis.

$$\text{Percentage of Learners Response} = \frac{A}{B} x 100\%$$
$$= \frac{19,4}{20} x 100\%$$
$$= 0,97 x 100\%$$
$$= 97\%$$

Based on the results of the analysis of data questionnaire response of learners in the use trial obtained a score of 0.97. The score is obtained from the results of the positive response questionnaire of learners (learners answer "YA") with a percentage of interpretation of the response of learners 97%. The percentage value if changed in qualitative form can be concluded that the educational game media developed belongs to a very high interpretation interpretation. The acquisition of this scale shows that the developed product is worth testing to the next stage of the product effectiveness trial.

This t-test test uses data on the difference in the learning outcomes of pre-test learners and post-tets experimental classes (educational game media) and control classes (microsoft sway-based multiple media). The results of the T-test using the SPSS application conducted show sig. (2-tailed) 0.00 or <0.05, can be interpreted there is a difference in the average difference in learners' learning outcomes between the experimental class and the control class.

After the indepent sample T-test next performs an analysis of relative effectiveness. This aims to find out how much the relative effectiveness of the educational game media "Bandabasah" compared to microsoft sway-based twinkle media. The following is the result of calculating the relative effectiveness of educational media "Bandabasah."

$$ER = \frac{MX_1 - MX_2}{\left(\frac{MX_1 + MX_2}{2}\right)} x100\%$$
$$= \frac{13,67 - 26,57}{\left(\frac{13,67 + 26,57}{2}\right)} x100\%$$
$$= \frac{12,9}{\left(\frac{40,24}{2}\right)} x100\%$$
$$= \frac{12,9}{(20,12)} x100\%$$
$$= 0,641 x100\%$$
$$= 64,1\%$$

The results of the analysis of the learning results of learners of educational game media theme Beautiful Togetherness based on local wisdom Bondowoso obtained a percentage of relative effectiveness test 64.1% with interpretation of high effectiveness. The acquisition of this scale shows that the developed product is worth using in the learning process of the theme of The Beautiful Togetherness of Local Wisdom Bondowoso.

The results of the student response using the student response questionnaire with the help of google form using the respondents of the experimental class of learners amounted to 30 learners. Data questionnaire response of learners by obtained the following analysis results.

Percentage of Student Response

$$= \frac{A}{B} \times 100\%$$

$$= \frac{29,6}{30} \times 100\%$$

$$= 0,986 \times 100\%$$

$$= 98,6\%$$

Based on the results of the analysis of the response of students of educational game media theme Beautiful Togetherness based on local wisdom Bondowoso obtained a large percentage of Y 98.6% with a very high definition of interpretation. The acquisition of this scale means that learners are happy to learn to use educational game media and educational game media is worth using.

CONCLUSION

Based on the results of research on the development of educational game media theme Of Beautiful Togetherness based on the local wisdom of the city of Bondowoso that has been done, it can be concluded that: (a) Process of Developing Educational Game Media, the first stage in the process of creating educational game media is to analyze teacher books and student books on the theme of Beautiful Togetherness that needs to be added material of local wisdom Bondowoso in order to introduce local wisdom to learners. Furthermore, conducting observations and interviews at SDN Dabasah 01 Bondowoso found the problem that SDN Dabasah 01 Bondowoso already has a media learning theme beautiful togetherness but less effective. The next step is to discuss by visiting an expert who is in his field and getting advice to conduct research on the development of educational game media "Bandabasah". The last step is to design and create an educational game media "Bandabasah" and (b) Results of Educational Game Media Development , the results of the development of educational game media are seen from several aspects, namely aspects of product validity, learning outcomes, and positive responses of learners. Here's the description: (1) the results of the educational game media validation test "Bandabasah" from the three validators received an averagevalidan of 91.3% with very decent validity criteria. (2) aspects of the use trial are seen from the results of the positive response of learners to the educational game media "Bandabasah". Acquisition of percentage results of 97% with very high interpretation. (3) aspects of Relative Effectiveness are seen from the results of the t-test (indepent sample T-test) and the Relative Effectiveness test. The t-test (indepent sample T-test) shows sig results. (2-tailed) 0.00 or <0.05, meaning there is an average difference in the learning outcomes of experimental classroom learners and control classes. And the results of the Relative Effectiveness test obtained a percentage of 64.1% with high effectiveness interpretation. And (4) the results of the response test of the educational game media learners "Bandabasah" using google form-assisted questionnaires given to students of class IV experimental class SDN Dabasah 01 Bondowoso improved the percentage result by 98.6% with a very high definition of interpretation.

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