PROJECT-BASED 21S- CENTURY THEMATIC LEARNING MEDIA DEVELOPMENT USING SAC FOR ELEMENTARY SCHOOL STUDENTS

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Abstract: *This study aims to develop project-based thematic learning media using SAC to improve 21st-century skills for fifth-grade elementary school students and test the learning media's feasibility, practicality, and attractiveness. The research method used is development research or called R&D. The research model used is the Borg and Gall development model. The implementation of the development steps does adjust to the needs of the researcher. Given the limited time and funds owned by the researchers, simplified these steps into four steps: data collection, planning, product development, validation, and trials. The questionnaire consisted of media experts, material experts, learning experts, practitioners (teachers), and student responses. The research used quantitative and qualitative descriptive techniques. The results from the media expert validation got a score of 68.89 or categorized as "Eligible." The material expert's assessment results got a score of 93.84 with the "Very Eligible" category. The score of the learning expert assessment is 83.63 categorized as "Very Eligible." obtained the feasibility of the media from the teacher's evaluation with a score of 82.85 categorized as "Very Eligible." The student questionnaire assessment got a score of 83.92 or "Very Eligible." All expert validations, teacher assessments, and student responses obtained an average score of 82.96 which means the project-based thematic learning media of SAC is "Very Eligible." So it can conclude that this learning media is appropriate for improving elementary school students' skills in the 21st century.*
Keyword: Project-Based Learning, SAC Media, Thematic Learning, 21st Century Skills.

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INTRODUCTION

The role of education is vital to improve the quality of human resources. Moreover, Indonesia is currently entering the era of industrial revolution 4.0, which has changed lifestyle in various aspects of life in society so that it demands that generations have multiple skills. For this reason, education has expected to be able to print individuals who can compete in the global world. Because education is the spearhead of the progress of civilization, the quality of human resources depends heavily on the quality of education.

With the importance of education for the advancement of human civilization, the government included instruction in the opening of the 1945 Constitution in Alenia IV, which explained that one of the national goals of the Indonesian nation is to educate the life of the country. This is also stated in Law No. 20 of 2003 on National education system, which reads, "National education seeks to develop the ability and form the character and civilization of a dignified nation to educate the life of the nation, aiming to develop the potential to become a man who believes and fear god almighty, noble, healthy, knowledgeable, capable, creative, be independent, and be a democratic and responsible citizen."

Based on the opening of the 1945 Constitution and Law number 20 on Sisdiknas above, it can understand that education seeks to prepare quality human resources. Printing quality human resources, of course, requires a quality education industry that is also an education that can activate and develop student creativity.

However, when looking at the current conditions, the quality of our education is still far from expectations, where output education has not been encouraging until now. As the results of TIMSS (Trends in International Mathematics and Science Study) show that the ability of Indonesian students is ranked very low in terms of; (1) understanding complex information, (2) theory, analysis, and problem-solving, (3) use of tools, procedures and problem-solving and (4) conduct investigations (Hadi & Novaliyosi, 2019). Similarly, in mathematical achievement, Indonesia's position is still below international as reported by TIMSS in 2003; Indonesia is ranked 35 out of 46 participating countries with an average score of 411, while the average global score is 467. The results of the 2007 TIMSS study, Indonesia was ranked 36 out of 49 participating countries with an average score of 397, the results of the 2011 TIMSS study, Indonesia was ranked 38 out of 42 participating countries with an average score of 386, while the international average score was 500 (P4TK, 2011). And the latest result, namely TIMSS 2015, Indonesia is ranked 44 out of 49 countries (Nizam, 2016).

The TIMSS criteria divide the achievements of survey participants into four levels: low (low 400), medium (intermediate 475), high (high 550), and advanced (advanced 625) from the data above so that Indonesia's position is at a low level. Even the results of TIMSS 2011 put Indonesia in a low position where Indonesia's ranking is even below Palestine, a country that has been in a state of war (Hadi & Novaliyosi, 2019).

Based on the reflections from the TIMSS study above, some experts assess because the education system has been more focused on aspects of low-level knowledge that are memorized without regard to high-level thinking skills and ignore aspects of skills and attitudes. Aware of the low quality of education, the government is currently implementing a new curriculum known as the 2013 curriculum. Based on the Regulation of the Minister of Education and Culture states that the 2013 Curriculum is applied to respond to current and industrial challenges to prepare Indonesian people to have the ability to live as individuals and people of the country who believe, productive, creative, innovative, and

efficient and able to contribute to community life, state and civilized world. In its application, teachers are required to provide different learning and improve the quality of student thinking, both in terms of affective, cognitive, and psychomotor, of course with a varied learning model, one of which is the project-based learning model.

The project-based learning model is a learning model that activates students by applying scientific measures, namely observing, assessing, collecting information, processing information, and communicating (Nurfitriyanti, 2016). By using the project-based learning model, it is expected that it can improve 21st-century skills. This is very much in line with the challenges of revolution 4.0, which requires millennials to have a variety of skills, especially 21st-century skills that include 4C (Communication skills, Collaboration skills, Critical thinking and problem-solving skills, and Creativity and innovation skills). This 21st-century skill will develop optimally if the learning develops student creativity (Komara, 2018).

However, the fact in the field turns out that most of the teachers have not applied a varied learning model, especially the project-based learning model, where teachers are still comfortable using conventional learning with lecture methods and teacher-centered. This fact is indicated by pre-research observations when field practice activities (PLP2). Some teachers have not maximized the active learning model, especially in the midst of covid 19, as the problem is now increasingly real.

Based on the results of interviews with several teachers at the location of PLP2 in Muhammadiyah Sangonan III Yogyakarta elementary school. It obtained information that teachers apply convention learning due to many industries; (1) Most teachers have not been able to use technology in learning. In this case, teachers only use WhatsApp, and only a few of the teachers in teaching use google classroom. Meanwhile, if you look at the development of technology today, it can use many applications. One of them is SAC (Smart App Creator); still, teachers in giving students assignments only do exercise problems without developing student creativity. The issues set in general still use the low-level cognitive realm. (2) Have not used exciting and innovative learning media so that learning is less effective. (Interview, August 2020). If the learning industry has developed so, then the competence of students will not develop optimally.

Departing from the above, the development of project-based learning media becomes an inevitability to develop 21st-century skills for millennials, in this case, elementary school students. For this reason, researchers are encouraged to establish thematic learning media in the 21st century based on projects by using SAC for elementary school students in The application of project-based learning. It has believed to develop students' skills, especially 21st-century skills, namely high-level thinking and developing student creativity. So that the goal of education is not only at a low level of cognitive level but also to create high-level cognitive, it is up to creating. The same thing was also expressed by (Aliyah, 2017). He said that using projects can increase students' creativity in solving problems by producing products and works. Similarly, the research results (Holmes, 2012) revealed that PjBL could develop the necessary skills in the 21st century, including creativity, innovation, and information technology skills.

SAC (Smart App Creator) is one application that can design more exciting and interactive learning. In addition, it also has several advantages (Smart App Creator, 2020), among others; 1) Does not require programming skills so that anyone can use it as a game-based learning medium; 2) can implement external applications on various platforms, whether

Android, iOS, web, Microsoft, or others; 3) Can apply animation to the art design of the application to develop according to the imagination of the developer based on the needs of the end-user; 4) Interactivity; 5) Supports various types of formats, whether mp3, mp4, png, jpg, gif, pdf, insert webpage, map, or real-time rest; 6) integrated web services, thus making applications more functional; etc. (Budyastomo, 2020)

METHOD

This research uses a type of Research and Development (R&D) development research. The development research model used by researchers is the Borg and Gall development model. The implementation of the development step by step has been tailored to the needs of researchers, given the limited time and funds owned by researchers, until the action simplified into four stages of development, namely data collection, planning, product development, validation, and trials. (Sugiyono, 2016)

The subjects used in this study were students of class V of Muhammadiyah Sangonan III Yogyakarta Elementary School which amounted to 22 students. Project-based 21st century thematic learning media development research using SAC for primary school students is conducted online.

The data collection instruments in this study used questionnaire sheets or questionnaires. Data collection procedures aim to obtain data used as a basis for making improvements to achieve validity, practicality, and the wisdom of learning media.

The data analysis techniques used in this development research are quantitative and qualitative data analysis. Quality tests by a team of validator experts are media experts, material experts, learning experts, assessments from teachers, and student response questionnaires.

RESULTS AND DISCUSSION

This development research resulted in a project-based 21st-century thematic learning medium using SAC for elementary school students. This learning media is in the form of an application and can operate through mobile phone technology. Based on the research that has been done in obtaining the results of the study and discussion at the following stages of development:

1. Collecting Data
   The information-gathering stage is carried out to recognize the needs of learning in the field. The information collection stage is carried out by field study methods as well as library studies.

2. Planning
   The thematic learning media planning stage of the 21st century-based project using SAC for elementary school students conducted by researchers is to compile a media framework, presentation of image illustration and production of material, media design planning, preparation of research instrument design.

3. Product Development
   In this stage of the development of learning, media researchers conduct consultations with guidance lecturers in developing media. The material presented is the material that is in thematic subjects.

4. Validation and Trial
   Media that has produced, then evaluated. The form of evaluation of media products as a thematic learning resource of ecosystem component materials is validation. Validation did in two stages. Stage I is validation by material experts and media experts. Through this stage, they have obtained product feasibility data and advice from experts. The suggestion is the revision of product stage I. The results of the phase I revision are used for validation to II by the teacher, the teacher's advice to revise II.

This learning media component consists of:

1. Identity
2. KI and KD
3. Learning Objectives
4. Instructions
5. Material
6. Playing
7. Evaluation
8. Development

Figure 1. Project-based 21st-century thematic learning media uses SAC for primary school students

The material used in this media is class 5 theme 5 (Ecosystem) subtheme 1 (Ecosystem Component) Learning 5 & 6. Materials adjusted to the study plan according to the level of HOTS (High Order Thinking Skills). The material is adjusted to 4 subjects, namely IPA, Indonesian, PPKn, and SBdP. By the theme taken, namely Ecosystem. The description of the material in the early 21st-century project-based thematic learning media using SAC is another:

1) Indonesian: Concepts of concepts related to non-fiction texts and concepts related to non-fiction texts into writing with their language.
2) PPKn: The importance of unity and unity to build the harmony of life.
3) SBdP: Songs in various tones with musical accompaniment.
4) IPA: Relationships between ecosystem components and food webs in the environment, the concept of food webs in an ecosystem.

Project-based 21st-century thematic learning media uses SAC for elementary school students who have been successfully developed and tested for validity to expert validators. The results of the learning media validity test that has been developed are as follows.

Obtained the feasibility test results by media expert validators on thematic Learning Media of the 21st century-based project using SAC for elementary school students as a whole a score of 68.89%, so it can be said that media in the category "Worthy." Media expert validation results conclude that thematic learning media of the 21st century-based project using SAC elementary school students are worth using for product trials with revisions.

Obtained The results of a feasibility test by a material expert validator on the 21st century-based thematic Learning Media project using SAC for elementary school students as a whole a score of 93.84%, so it can say that this media is in the category of "Very Worthy." The conclusion of the results of expert validation of the material that is a project-based 21st-century thematic learning medium using SAC elementary school students is feasible in the learning process.

The validated test results by the expert validator of learning on thematic Learning Media of the 21st century based project using SAC for elementary school students as a whole obtained a score of 83.63%, so it can say that this media is in the category "Very Worthy." The conclusion of expert validation of learning, i.e., thematic learning media of the 21st century-based project using SAC elementary school students, is very feasible for the learning process.

Project-based 21st-century thematic learning media using sac elementary school students are pictures, videos, games, or games that can help motivate and learn students so that learning is not boring. In this section of media, there is not only material, images, videos, and evaluations, but this learning media has access to quizzes that vary in the game section that will make it easier for students to understand the material. In the evaluation section, an LKPD has been accessed using a link to make it easier for

students to understand the intended example. This learning medium can help students in learning independently or in groups. As Rohani (2019) said, the media is the intermediary and delivery of messages from the message sender. After that, many experts and organizations have shared the limits over the interpretation of the media. This can make it easier for students to achieve their learning goals. The procedures greatly influence the teaching and learning process (education) and educational media used. Both are related, where the selection of certain ordinances will affect the type of media to be used. In the sense that there must be conformity between the two to realize the purpose of education. While according to Arsyad A (2017: 3) said that the media has an understanding as graphic, photographic, or electronic tools to capture, process, and rearrange visual or verbal information. Media is used to support the teaching and learning process.

Learning media is made attractive so that it can increase students' learning spirit and motivation. Motivation is the encouragement of someone to do something (Usman 2013, pp. 276). Motivating students through action or encouragement can stimulate students to be willing to do learning. The ministry of learning media can be seen from the appearance of media such as images contained in learning media. Media with technology in the learning process can attract the attention of students. It has been reinforced by (Budyastomo 2020) SAC (Smart App Creator) is one application that can design more engaging and interactive learning. It is in line with research by Bani Denis Taroreh (2018), resulting in a product in the form of e-learning companion learning that is said to be very interesting and helpful to increase motivation and student learning outcomes and help to learn in class.

This learning media, in addition to applying active learning, also develops activity-based learning, namely PjBL.

PjBL learning has been used to create the 21st century 4C. As the results of Redhana's research (2019), the project-based learning model is a learning model that refers to the philosophy of constructivism. Through projects undertaken by learners, learners' activities indirectly increase because they are free to apply their knowledge and skills. This project-based learning model focuses on concepts that involve learners in problem-solving activities and provide opportunities for learners to work autonomously.

SAC (Smart App Creator) is one application that can be used to design more exciting and interactive learning. In addition, it also has several advantages (Smart App Creator, 2020), among others; 1) Does not require programming skills so that anyone can use it as a game-based learning medium; 2) can implement External applications on various platforms, whether Android, iOS, web, Microsoft, or others; 3) Can apply animation to the art design of the application to develop according to the imagination of the developer based on the needs of the end-user; 4) Interactivity; 5) Supports various types of formats, whether mp3, mp4, png, jpg, gif, pdf, insert webpage, map, or real-time rest; 6) integrated web services, thus making applications more functional; etc. (Budyastomo, 2020)

Thematic learning media in the 21st century based on the SAC project for elementary school students developed by this researcher has several advantages and disadvantages. This media has applications that can be downloaded using mobile phones and can operate through mobile phones. There are videos, pictures, quizzes with various features such as Quiz, Educandy, etc. Thus helping students make better understand the content of the material to be delivered. Its application in project-based 21st-century thematic learning media using SAC for elementary

school students can be used individually or in groups.

CONCLUSION

The results and discussion of the development of thematic learning media in the 21st century based on SAC projects for elementary school students have some points. It showed that: 1) thematic learning media in the 21st century based on projects using SAC for elementary school students is very valid to use. The results of validation of media experts obtained a score of 68.89% with a decent category. The assessment of the feasibility of learning media by material experts received 93.84%, with a very decent variety. Evaluating the feasibility of learning media by learning experts obtained a score of 83.63% with a very proper category. Teachers' evaluation of the feasibility of learning media received 82.85%, with a very decent variety. 2) Project-based 21st-century thematic is very practical for class V. It uses SAC for elementary school students learning media. 3) Thematic learning media of the 21st century-based project using SAC for elementary school students is very interesting for class V Muhammadiyah Sangonan III Yogyakarta Elementary School. It can see from the results of the student response by getting a score of 83.14%. Based on the results of this development research, thematic Learning Media of the 21st century-based project using SAC for elementary school students can use by teachers and students to facilitate learning activities and be used by teachers as a reference in developing learning media. Project-based 21st-century thematic Learning Media development research using SAC for elementary school students can use by researchers to add knowledge and skills in designing learning media and become a reference for other researchers. Yogyakarta.

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