The practicality of smart apps creator-based instructional media on 2D animation subject

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Abstract: Based on the results of observations at Vocational High School Pasundan 1 of Serang City (SMK 1 Pasundan Serang City), some of them do not meet the requirements for mastery learning outcomes, students find it difficult to digest animation lessons, and the teacher's limited ability to make media. Anticipating these obstacles requires an interesting new learning media that can generate students' imagination and creativity, one of which is learning media based on smart app creators. This study aims to find out how the process of developing learning media for Smart Apps Creator, to find out from the development of learning media in 2D Animation subjects that will be used in the learning process and to find out interactive learning media based on Smart Apps Creator in 2D Animation subjects at SMK 1 Pasundan which will be used for the teaching and learning process. This method used Research and Development (R&D). Research through the use of identification of potential and problems, data collection, product design, design validation, revision, product testing, revision, trial, revision and mass production to produce a final product. The trial was conducted on 24 students of class XI SMK Pasundan 1 Serang City. The assessment of the 4 validators of the Interactive Learning Media, which is 90%, shows that the Interactive Learning Media is very valid to be used as a learning resource. The results of the assessment of 24 students that Interactive Learning Media has a practicality value of 89.30%, it can be said that the level of practicality of Interactive Learning Media is very practical and very well stated.

Keywords: Learning media; Development; Smart Apps creator; 2D animation

1. Introduction

The learning media that is widely used today is interactive learning media based on Android applications. Android application-based interactive learning media is learning media that contains elements of text, graphics, audio, and video in one program (Huda et al., 2019; Huda & Hartanto, 2020; Ya et al., 2021). The use of interactive learning media based on Android applications requires compatible software, both in handling multimedia objects and in handling instructiveness. Software that supports both features includes Smart Apps Creator and Microsoft PowerPoint.

Learning 2D Animation at the Vocational High School (SMK) level aims to master the competency standards that have been set, therefore learning 2D Animation must be made more interesting and easier to understand (Fuller, 2015; Le et al., 2022; Türkmen & Sertkahya, 2019). One effort to make learning more interesting and easier to understand is to use learning media. Moreover, there are still many current learning methods regarding this material which always seem the same and monotonous. The teacher has implemented various learning models and media. However, this has not improved learning outcomes and a lack of understanding of the material also means that the material cannot be

delivered properly. This resulted in students becoming bored quickly and the delivery of material failed. Which then results in less than the maximum student learning outcomes on the material in question. Because of this, interactive learning media based on Android applications are needed which can optimize the teaching and learning process for students. The existence of interactive learning media based on Android applications can attract student learning interest, which is based on Smart Apps Creator.

Learning media is one of the intermediary tools that is quite important for the learning process, the presence of media will help the learning process to be more interesting and not monotonous (DeLuca et al., n.d.; Lv et al., 2022; Sarrab, 2012). In addition, the media can increase the interest and motivation of students in the learning process. The use of learning media in the learning process can generate new desires and interests, generate motivation stimulate learning activities, and even bring psychological influences on students (Hernawati et al., 2021).

Based on observations made with class XI 2D Animation Subject teachers at Pasundan 1 Vocational School, Serang City in 2022 - 2023, 2D Animation Learning at Pasundan 1 Vocational School, Serang City still uses conventional learning media. Some subjects still use the same learning methods and not many use new methods that can further optimize student learning outcomes. Certain subjects already use other methods for learning, including using practical tools (models), but there are many obstacles in their application, including the reduced intensity of learning time for preparation and the material included is still incomplete (Folkourng & Sakti, 2022). There are no other learning media used in the learning process. The use of learning media that does not vary can make students quickly get bored and bored. In addition, learning also does not use interactive learning media. So that students can only learn from notes given by the teacher. For this reason, some students have difficulty understanding the material being taught.

Seeing the reality above, it is necessary to design an Interactive Learning Media Based on Smart Apps Creator in 2D Animation Subjects which can be used as a source of student learning and can also be used to help teachers teach. Even though there are many advantages to using interactive learning media, especially in 2D Animation lessons, in reality, Smart Apps Creator Interactive Learning Media is still rarely used in the learning process. Conventional learning methods that are commonly used are considered sufficient for the learning process and delivery of material. Based on previous similar research, computer-based instructional media has a positive impact on improving learning outcomes and students' competencies, such as flipped classrooms using CBI (Sakti & Sukardi, 2020), augmented reality (Huda et al., 2021)and lean application (Hartanto et al., 2020). Based on this explanation, it is necessary to create and design learning media that is packaged in the form of interactive learning media based on Android applications and is expected to improve student learning outcomes, increase students' learning interest in using Android, and easily understand learning material.

2. Methods

The method used is the Research and Development Method (invention, product development and testing), which is a research method used to develop or validate products used in education and learning. Research and development is a process or steps to develop a new product or perfect an existing product, which can be accounted for (Alias & Hasim, 2012). In general, R&D research is longitudinal (several stages) (Sugiyono, 2012). The stages that will be carried out in this research are shown in Figure 1.

Figure 1. Research and Development Method Research Stages (Sugiyono, 2012)
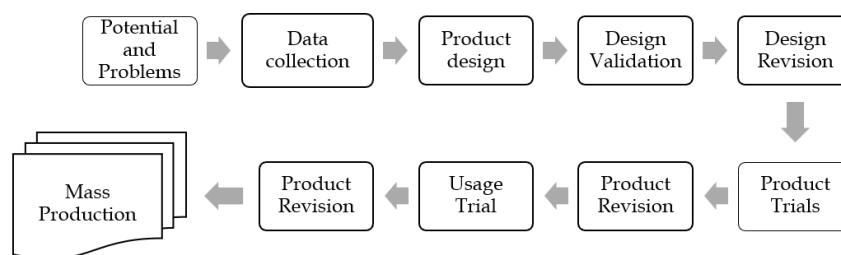
The test subjects in this study were class XI students of the Multimedia Department at SMK 1 Pasundan Serang City. The type of data taken in this study is primary data. The first data is in the form of validation results for Making Smart Apps Creator-based Learning Media provided by the validator. The second data was obtained from the implementation of the Smart Apps Creator-based Learning Media Making trial. In the trial for Making Learning Media Based on Smart Apps Creator, the following are taken in the form of, (1) Observations on the implementation of learning using Making Learning Media Based on Smart Apps Creator, (2) Student responses to Making Learning Media Based on Smart Apps Creator which has been tested. The techniques used by researchers in collecting data were interviews, questionnaires or questionnaires regarding expert validation questionnaires consisting of learning expert validation questionnaires, media expert validation questionnaires, material expert validation questionnaires, and student response questionnaires. The procedures carried out in the Smart Apps Creator-based learning media development research are as follows: analysis, design, implementation, testing, expert validity, revision, due diligence and media improvement.

The data collection instrument used by the researcher is a validity instrument used to determine whether the designed learning media is valid or not. In other words, all instruments that have been designed will be validated by the instrument. The validation sheet in this study is validation carried out by validators and practical instruments for students which are used to collect data or information needed by the author as research material which aims to determine the feasibility and attractiveness of teaching materials based on Smart Apps Creator Learning Media which created by the author as an alternative learning. Giving the value of validity and practicality by using Eq. 1.

$$NP = {R}/{BC} \; x \; 100 \tag{1}$$

Where,

NP = The per cent value sought or expected
R = Score raw materials obtained by students
BC = Score The ideal maximum of the test in question

The validity and practicality categories can be seen in the following table 1.

Table 1. Assessment of validity and practicality

Mark	Rated aspect
86%-100%	Very Practical
76%-85%	Practical
60%-75%	Pretty Practical
55%-59%	Less Practical
≤ 54%	Impractical

3. Results and discussion

The results of the initial display design that appears when opening interactive learning media. The initial display design of the product is show in Figure 2.

Figure 2.
Initial display
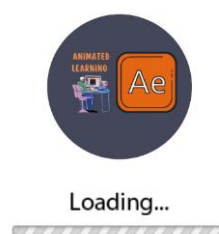
The start menu display is a display that has a "start" menu in it which functions to be able to continue to the main menu display. The "start" menu display design can be seen in Figure 3.

Figure 3.
Start menu display

The main menu is a menu display that displays the main menus in mobile learning media, such as the material menu, SK/KD menu, indicator menu, objective menu, training menu, evaluation menu and profile menu. The main menu display can be seen in Figure 4.

Figure 4.
Main menu

Based on the results of data analysis research conducted by researchers including the following:

3.1 Validation expert test

Validation of Interactive Learning Media from the validator is carried out to assess the design of Interactive Learning Media. The validator provides assessments, suggestions and comments on the design of Interactive Learning Media by filling out the questionnaire that has been provided. The

validation of Interactive Learning Media was carried out by four validators by filling out a feasibility questionnaire for Interactive Learning Media. A total of 10 statement items. The assessment of the validator for interactive learning media in 2D Animation subjects is reviewed from a clear description of the distribution of validity questionnaire scores in the following Table 2.

Table 2. Frequency distribution of validity questionnaire scores	Interval class	f0	%f0
	42-46	2	50
	47-49	2	50
	Amount	**4**	**100**

Based on Table 2 it can be explained to find class interval calculations and class length.

Table 2. Frequency distribution of validity questionnaire scores
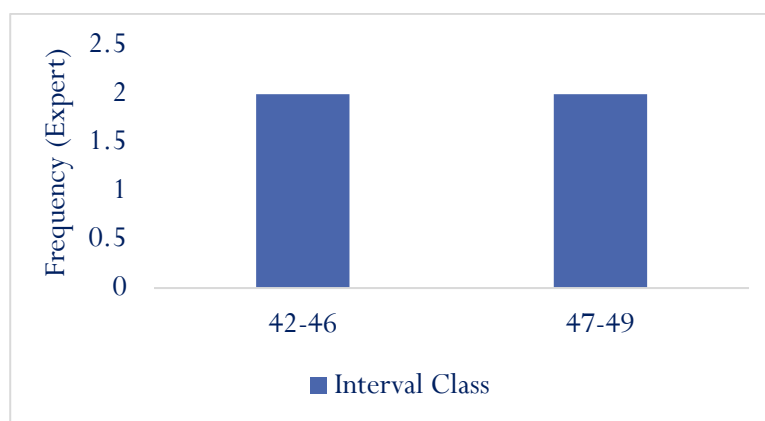

Figure 5 provides information on the figure of histogram expert validation for media. Overall, the interval class number showed a stable trend. The average result of calculating the value of 4 validators is 90% and looking at the interpretation criteria table, it is concluded that the validation of the Interactive Learning Media validator is stated to be Very Valid.

3.2   Practicality trial

Practicality trials were used to determine the practicality level of Interactive Learning Media, practicality trials were conducted by 24 students. The aspects assessed in the readability test of the Interactive Learning Media consist of the condition and use of the Interactive Learning Media from 8 statement items. The average value of 89.30% can be said to be the practicality level of Very Practical Interactive Learning Media. The effectiveness and time of learning consists of 5 points. Statement seen with the average value of 88.54%, it can be said that the level of effectiveness of Interactive Learning Media is stated to be Very Effective, while the benefits of Interactive Learning Media consist of 5 statement items seen with an average value of 88.83%.

Table 3. Frequency distribution of practicality questionnaire scores	Interval Class	f0	%f0
	64-71	1	4.17
	72-75	5	20,83
	76-79	3	12.5
	80-83	5	20.83
	84-87	7	29.17
	88-91	3	12.5
	Amount	**24**	**100**

Based on table 3 it can be explained to find class interval calculations and class length.

Figure 6. Practicality stage of learning media based on Smart Apps Creator
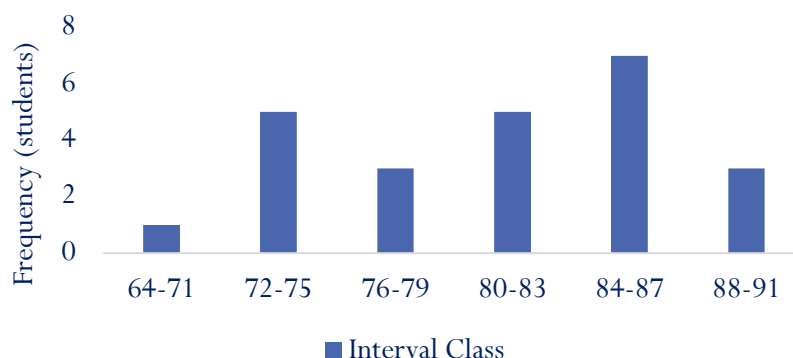
In the practicality stage of learning media based on Smart Apps Creator, validators and students were also asked for input through a practical questionnaire, the results of which showed that the learning media based on Smart Apps Creator in the developed 2D animation subject was attractive to students and very easy to use. The learning process using Smart Apps Creator-based learning media helps teachers in delivering learning material. Besides that, the use of Smart Apps Creator-based learning media supports students in learning 2D animation subjects. Learning by using learning media based on Smart Apps Creator can improve student learning outcomes, increase student learning interest in using Android, and easily understand learning material. According to the validator, the developed Smart Apps Creator-based learning media is appropriate for students to apply and use. Based on the results of the validity analysis by the validator in the First Design, 90% was obtained and looking at the interpretation criteria table, it was concluded that the validation of the Interactive Learning Media validator was stated to be Very Valid. The practicality questionnaire based on Smart Apps Creator, which was filled in by students, also amounted to 89.30%, so the media can be said to be very practical for students to learn 2D Animation. It is in line with the (Huda et al., 2020) research finding, which showed a positive impact of learning media based on Android in improving students' learning outcomes.

4. Conclusion

The developed Smart Apps Creator-based learning media has been said to be practically used in learning. This is following some of the results of questionnaire analysis from material experts, media experts and students who assess that learning media based on Smart Apps Creator has very good criteria. The Design of Smart Apps Creator-Based Learning Media Development The final result of this research is learning media in 2D Animation subject. This learning media is in the form of application/HTML. Validity, the practicality of developing interactive learning media based on the Smart Apps Creator produced is valid and practical to use in learning at school. This is proven based on the assessment of the results of validation trials with an average percentage of 90%, very valid and the results of the practicality trials of assessing student responses with an average percentage of 89.30%, very practical. This study will apply to the existing knowledge of teaching and learning, especially in instructional media for learning, as well as to the stakeholders of education who will make decisions related to the curriculum. The limitation of this study is just the practicality of Smart Apps Creator-based learning media, it has not been tested yet for another variable. This can be a reference for further researchers who will conduct similar research.

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Declarations

Author contribution

Jumaroh a research implementer, designs media and collects data. Doni Pernanda as research and article concept designer. Miftahul Ulum as research and article concept designer. Chau Trung Tin as article writer and proofreader.

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Competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethical Clearance

The involvement of human subjects in this rese arch complies with the Declaration of Helsinki.

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