

# Smart Cards as Learning Media for the Development of the Match Index Card Method on the Theme of “*Cita- Citaku*” Class IV Elementary Schools

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**Abstract:** This development research aims to test the feasibility of smart card. This media terms of learning, material suitability, and knowing the increase in students study outcomes. The research methods used are modifications of the Borg and Gall development model which include research and data collection phases, research planning, product planning and development, limited trials, and revision of trial results. Research has shown that smart cards have 97% of the feasibility and 98.7% conformity of terms. This affects the increase in student learning outcomes.

**Keywords:** social studies, learning media, smart card, elementary school

## 1. INTRODUCTION

Learning Media is one of the learning components that cannot be ignored. Media Learning is a means to improve the activities of teaching learning. Given the many forms of media, the teacher must be able to select it carefully, so it can be used appropriately (Kustandi & Sutjipto, 2013). The purpose of media use is to increase effectiveness and efficiency in teaching and learning activities, improve to motivation student, as a variation of learning methods, and improve student activation in teaching and learning activities (Untari, 2017). In addition, learning media in the learning process has good benefits for students.

Ely (Mahnun, 2012) explained that the benefits of learning media is to improve the quality of education through increasing the speed of learning, can give a more individualized education possibilities, giving basic More scientific teaching, teaching can be done steadily, improving the realization of immediacy learning, and providing a broader education presentation. So, it can be known that learning media has an important role in a learning process.

The existence of learning media in IPS material is also necessary because of the abstract IPS material. Specifically, IPS is a science that examines a variety of social and humanities disciplines as well as basic human activities that are scientifically packaged in order to provide insight and deep understanding to students, especially at the basic level (Susanto, 2013:141). So that the IPS that examine the social sciences often make students difficult to understand the learning materials. The

results of interviews with grade IV teachers at Public Elementary School (SDN) Pakunden 1 Blitar City, Indonesia, are known that the Social Science (IPS) media at the school is not optimal. Media learning is as limited as drawing on the board and utilizing the surrounding environment as a learning medium.

In addition, based on the results of the observation learning obtained information that students are still dominant to receive learning through lecture methods. Students only receive information from the teacher's explanation and copy the explanations of the IPS concepts from the board to the student's notebook. The learning went well, but later seen an indication of lack of student learning concentration. Some students start to distract from others, such as chatting with friends, drowsiness, tagging books, Daydream, and playing alone.

An indication that a student's case with the Deviant learning activity can be assumed as a symptom that learning is less interesting and tedious for students. The results of the study, can provide an innovative idea for researchers to develop learning media for students. The learning medium developed in the form of a card contains a mix of images and words that are packed appealing to students. The study of the level of knowledge achieved by Ahmad (Mahnun, 2012) shows that achievement through the sense of vision reaches 75%, while through the auditory senses only 13%, while through other senses, such as Tasting, touch, smell, knowledge can only be obtained by 12%. When a learning environment equipped with images gives a 3 times stronger and deeper impact than words. While the images and words are combined, the impact is stronger than words.

The results of the study, can provide an innovative idea for researchers to develop learning media for students. The learning medium developed in the form of a card contains a mix of images and words that are packed appealing to students. The development of card media in this study is called Smart Card media.

**2. METHOD**

This type of research is research and development or research and Development (R&D). According to Sugiyono (2013), R&D is a research method used to produce a specific product, and test the effectiveness of the product. To be able to produce certain products used research that is analysis needs (used method of survey or qualitative) and to test the suitability of such products in order to function in the wider community, then it is necessary research to test the product’s effectiveness (used by the experimental method). The Borg and Gall model (Sukmadinata, 2009) includes preliminary studies as a research and data collector process, research planning, early product development, limited initial field trials, revision of trial results, test Field test result revisions, due diligence, revision of due diligence results, and dissemination and dissemination of the final product.

The subject is tried in this study as follows: Media Validator is a competent media expert, the material validator is a competent material expert, the practitioner validator is a class IV teacher at SDN Pakunden 1 Blitar City, a limited trial subject of class IV students Outside the city of Blitar, and the subject of the user is grade IV students at SDN Pakunden 1 Blitar City. The data collection techniques used are polls, observations, interviews, and tests. Interviews and observations were conducted at the beginning of the study, polls were used to determine media feasibility, and tests were used to determine whether there was an increase in learning outcomes after using smart card media. The data analysis techniques used are qualitative descriptive techniques. Quantitative descriptive analysis for the test of the product is referring to Akbar (2013:14) using the following formula. In addition, this research uses Guttman and Likert scales to facilitate data analysis.

$$\text{Validity} = \frac{T_{Se}}{T_{Sh}} \times 100\% = \dots\% \tag{1}$$

TSe = Total score empirically  
TSh = Maximum total score

**3. RESULT**

Result of development results to obtain a well-defined development media required measures that can be accounted for scientifically. The results of this development study are presented in Table 1. After a limited trial and product revision, the product is subsequently tested on a larger scale. A larger scale test of products is

done in order to determine if there is an increase in student learning outcomes. This increase in learning results is known based on pretests and posttest values. This test subject is all Class IV students at SDN Pakunden 1 Blitar City as many as 17 students. Pretest and posttest in the form of evaluation sheet with 10 description.

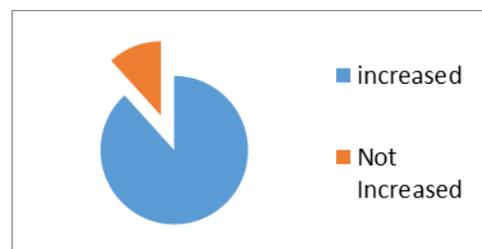
Problems on pretests and posttest alike. It aims to determine the increase in student learning outcomes. The results of learning the knowledge aspects of students on the product trials as follows (Table 2). Based on the results of the pretests and posttest above, it is known that from 17 students, there are 15 students who showed an increase in learning outcomes through smart card media and 2 students who did not demonstrate the improvement of learning outcomes (Figure 1).

**Table 1 Smart Card Media Validation Result**

No.	Description	%
1	In terms of interesting (Media validator)	97
2	In terms of conformity (material validator)	98,7

**Table 2 Result of Pretest and Post-test**

No	Student Name	Score		Note
		Pre-test	Post-test	
1	CEN	60	90	Increased
2	AN	50	80	Increased
3	AR	40	80	Increased
4	APH	80	100	Increased
5	ASR	50	80	Increased
6	DZF	50	40	Not Increased
7	KP	70	100	Increased
8	AKKD	60	90	Increased
9	DPL	60	100	Increased
10	EIA	30	60	Increased
11	BAMP	50	90	Increased
12	ADR	40	60	Increased
13	IAZ	50	80	Increased
14	APA	70	80	Increased
15	ALEW	50	100	Increased
16	AR	50	100	Increased
17	AAD	60	50	Not Increased



**Figure 1 Pretest Post-test**

**4. DISCUSSION**

This research conducted an IPS media development called smart card. This important learning media function

underlies this research. According to Susilana and Riyana (2009), media learning has an important function in the learning process, among others: (1) Clarify the message so that it is not too verbalistic; (2) Overcoming space limitation, energy time, and senses; (3) raises passion Learning, more direct interactions between students and learning resources; (4) enabling children to learn independently according to their talents and visual, auditory, and kinesthetic; and (5) provide the same stimulus, liken experience, and cause The same perception Thus, in order to realize the function, smart card media must go through the media validation phase to find out the behavior. In this research, material validation is done to determine the level of smart card eligibility in terms of conformity. Each aspect assessment uses a scale with a value range of 1 to 4. A value of 1 is not suitable for the media until the value 4 is confused with the media. The score will be amount and counted to determine the smart card conformance criteria.

Material validation is obtained by summing up the average assessment of material experts and practitioners. After the second average of known material validity, the value of material experts and field practitioners is accumulated as a result of general material validation assessment. The average material validity in general amounted to 98.7%. Based on these results, it is known that smart cards have the criteria "very decent" to be applied to the theme "Cita-Citaku" Class IV at SDN Pakunden 1 of Blitar. Smart cards also have high eligibility in terms of conformity.

In addition, the validation of the media covers the feasibility assessment of the content, feasibility assessment of the aspect of the display, feasibility of language aspects, and feasibility of use and presentation. Each aspect assessment uses a scale with a value range of 1 to 4. The value 1 is not suitable for the media and the value 4 is suitable for media. The score will be amount and percentage to determine the criteria of the smart card. To know the full media validation, the assessment of the media experts must be accumulated with the value of field practitioners. It is done to know the level of the overall smart card. As for average media validity in general amounted to 97%. Based on the results it is known that smart card material has the criterion "very feasible" to be applied to the theme "Cita-Citaku" Class IV at SDN Pakunden 1 Blitar City. Smart cards also have high feasibility in terms of frankness.

After the media validation is done, then revise the media based on the suggestions and notes from the validator to enhance the media. This is done so that students do not experience any misunderstanding using the smart card media. This is in line with the opinion of Adiwinata (2018), which is developed teaching media should contain the conformity of visual illustrations with discourse, scientific material, and factual truth.

The use of smart cards in learning needs to be identified to know whether the media has a good influence

for students. This good influence is characterized by the increase of students learning outcomes from not using smart cards until after using smart cards. To know this, do pretests and Posttest both before and after using smart card. Improvements can be seen from the results of the acquisition of a higher posttest value than the pretest value. However, there are still two students who did not experience increased learning outcomes. After going through the interview phase with the class IV teacher, it is known that one factor is still a student who does not experience learning outcomes because the student is not biased reading and writing. Based on this, generally, it can be concluded that there is an increase in the learning outcomes of grade IV students at SDN Pakunden 1 in Blitar after using a smart card as a learning medium.

The final product developed in the study was an educational card media named Smart card. Smart cards themselves are complementary media from the application of the Index Card Match method. Smart card specifications of the revised results (Figure 2; Figure 3).



Figure 2 Collection of Question Cards



Figure 3 Collection of Answers Cards

The picture above is a collection of 10 different answer cards. The answer card is different from the reason that the answer card is only written answers from the question card related to the aspect of knowledge. However, the problem cards and answers have a common barcode that contains videos related to learning materials. Based on its implementation, smart cards can only be done using the Index Card Match method. According to Suawrtiani

(2017), Index Card Match is a fun yet active way to review learning materials. He allowed the students to pair and play the quiz to the opponents.

## 5. CONCLUSION

Based on the results of this research and development, it can be concluded that this research and development results in the form of Learning Media smart card IPS charge in the theme "Cita-Citaku" Class IV at SDN Pakunden 1 Blitar City. The steps undertaken to produce smart card learning media are as follows: (1) the level of research and data collection; (2) research planning; (3) product development; (4) media validation; (5) revision of product I; (6) limited trials; (7) revision product II; and (8) product trials.

The results of the material expert validation, it is known that the material validity of 98.7% can be interpreted that the smart card medium is feasible in terms of conformity. Based on the validation results of the media experts, it is known that the media validity of 97% can be interpreted that the smart card media deserves in terms of the ministry. Product development is a smart card that is an educational card that can only be applied to the Index Card Match method. The Smart card is a class IV "Cita-Citaku" and can only be applied.

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