



Development of Pancen Media in mathematics learning for grade 3 elementary school students

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ABSTRACT

This research aims to determine the validity and practicality of the development of pancen media in mathematics learning for grade 3 students at SD Negeri 72 Prabumulih. This research is Research and Development (R&D), using the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model. Data collection was carried out by distributing media expert validation questionnaires, material expert validation, teacher response questionnaires, student response questionnaires individually (one to one) and small groups. Based on the research results, the media expert validation results obtained a percentage of 100% which was categorized as very valid, the results of the material expert validation obtained a percentage of 91.66% with a very valid category, for the results of the practicality of Pancen media, it can be seen from the results of the teacher response questionnaire which obtained a percentage of 100 % was categorized as very practical, the results of the individual student response questionnaire (one to one) obtained a percentage of 88.28% which was categorized as very practical and finally the results of the small group student response questionnaire obtained a percentage of 84.56% with the very practical category. Therefore, it can be concluded that the development of pancen media in mathematics learning for grade 3 elementary school students is declared valid and practical for use in learning.

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INTRODUCTION

Education is a continuous effort to create an atmosphere where the learning process becomes more active and students can improve their abilities and skills so that they can benefit themselves and others, Yusuf in (Wahyuni, R., & Napitupulu, S., 2022, p. 335). Education is a conscious effort to prepare students for guidance, teaching and training activities in the future (Yunika, P., Imansyah, F., & Riyanti, H., 2022, p. 758). According to (Santoso, E., Suryani, I., & Jayanti, 2023) Education is an absolute necessity for humans because it is impossible for a group of humans to live forward and

develop without education. Education is a continuous process that has no end (*Never Ending Proce*) (Sujana, 2019, p. 29). According to (Susanti, 2023) Education is a process of adapting to prepare for a better life in the future. In order to achieve a good future, of course it will be through an educational process that is in accordance with the educational curriculum (Hafshari, N, D., & Arini, N,W , 2023).

According to (Marcela, R., Idris, M., & Aryaningrum, K, 2022) Learning is an activity of transferring knowledge from teachers to students. According to (Afifah, H.N., & Fitriawanawati, M, 2021, p. 42) Mathematics is a part of the subject that has an important role in education. Mathematics can train us to be more careful and less careless (Mytra, P., Dkk, 2023). It is very important to teach mathematics to students because it can help solve problems that exist in everyday life (Sita,H., & As'ad, 2020, p. 492). Mathematics learning is a common learning and can be found at almost all levels of education from elementary school to university level. In line with the opinion of (A, Wijayanti, Suhender, A,W., Yanto., A, 2023 , p. 19) Mathematics learning is delivered to students starting from elementary school level so that it can train students to have the ability to think critically, logically, creatively, and Innovative.

Based on the results of observations and interviews with the homeroom teacher for class 3 at SD Negeri 72 Prabumulih, it is known that there are still many students who do not pay attention when the teacher explains the subject matter, such as playing in class, and it is not uncommon for some to even fall asleep in class, because students feel bored and not interested in the lessons delivered by teachers who only use printed books using the lecture method. This can have an impact on students' lack of understanding of the learning material. Therefore, interesting teaching materials or learning media are needed by teachers to support the learning process so that students become more interested in learning, do not get bored easily and will have an impact on both teachers and students.

Media is something that can be manipulated so that it can be seen, heard and used in learning (Cecep, 2020). According to (Septy, 2021) Learning is an educational institution that influences students in achieving learning goals. According to (Nurfadhillah, S., 2021, p. 13) Learning is an activity in implementing the curriculum of an educational institution in order to influence students to achieve a predetermined education. Learning media is one of the tools or tools that support students in understanding the material presented by the teacher in a learning process (Sari, D., Hermansyah, B., & Selegi, S.F., 2022, p. 49). (Asmara, D.F.M., dkk, 2020, p. 1840) believes that learning media is teaching media that is used as an intermediary for conveying material from teachers to students to achieve the expected goals. Teaching media is a tool to help the learning process in achieving effective goals (Amalia, T.F., & Zuhdi, U., 2019, p. 2706). Learning media can attract attention and motivate students' enthusiasm for learning (Sunedi, 2023, p. 1021).

Based on the background above, it is necessary to develop Pancen media (Simple Fraction Board) because this media is made using a magnetic board and is equipped with circular fraction pieces depicting concrete objects in the form of food so that it can make students more interested and enthusiastic when learning and can help students. in understanding fractions. Pancen media can be used repeatedly, anytime, anywhere and can be used by all low and high class students, it can make the process of learning activities more interesting and can increase students' understanding of grade 3 elementary school mathematics subjects so as to produce learning outcomes and learning objectives that can be achieved. achieved better.

RESEARCH METHOD

The research carried out in this development is Research and Development (R&D) type of research. According to (Sugiyono, 2022) Research and development (R&D) methods are research methods used to produce a particular product, as well as test the effectiveness of the product. Research and development (R&D) according to (Zakariah dkk, 2020). is a process or steps in developing new products or improving existing products. The ADDIE model is an analysis of components that are interconnected with each other (Rayanto, 2020). The research procedure used in this development

research is to apply the ADDIE model, which consists of several stages, namely the Analyze, Design, Development, Implementation and Evaluation stages (Suryani, 2019)

Data collection techniques in this research are questionnaires and documentation. At the prototype validation technique stage in this research, the researcher chose to use two expert testing techniques, namely material expert testing techniques and media expert testing techniques. The data analysis technique in this research is validity analysis, practicality analysis.

RESULT AND DISCUSSION

This research has produced a learning medium in the form of a pancen media on mathematical learning students of the 3rd grade of elementary school. This research is a type of research R&D (Research and Development), This research was carried out from July 17, 2023 to July 27, 2023 at the State Department of 72 Prabumulih which is located in Muara River Village, Kec. In this study, the researchers used the ADDIE research model in the development of a product that is Media Pancen On Mathematical Learning of Grade 3 Elementary School Students. The Addie model consists of several stages namely Analysis, Design, Development, Implementation, Evaluation.

Table 1. Product validation criteria

Kriteria Validitas	Tingkat Validitas
85,01% - 100,00%	Very valid, can be used without revision.
70,01% - 85,00%	Pretty valid, can be used but needs a small revision
50,01% - 70,00%	Less valid, it is recommended not to use as it requires major revisi
01,00% - 50,00%	Invalid, unusable.

Source : Akbar in (Intan, dkk, 2021, p. 1315)

Tabel 2. Pancen media validation results

No	Aspect	Indicator	Assessment Score
1	Pancen Media Design View	Interesting media appearance of pancen	4
		Media pancen made using durable materials	4
		Media in accordance with the cognitive development of 3rd grade elementary school students	4
2	Pancen Media Usability	Facilities of Pancen Media Operation	4
		Delivery of material using pancen media is easy to understand and understand by students	4
3	Utility	The media can help facilitate the learning process	4
		Attract the attention and enthusiasm of students	4
Minimum Score			28
Maximum Score			28
Validation Results			100%

Source: The Researchers

Based on the evaluation of media expert validation through the announced lifting instruments. Where the media validation assessment results from expert validators obtained 100% validation results thus it can be concluded that Pancen's media development is categorized as "Very Valid".

Table 3. Results for teachers

No	Question	Assessment			
		1	2	3	4
Product Qualification					
1	An attractive product using magnetic				✓

2	The fragments look attractive with patterns using stickers of concrete objects. (Makanan)	✓
3	Media shape and size suitable for 3rd grade SD students	✓
4	A durable and safe product for use in learning	✓
Material Qualification		
5	Media usage can clarify fragmented material	✓
6	Material delivered through the media according to basic competence (KD)	✓
Utility		
7	Can facilitate learning processes especially on mathematical subjects fragmented material	✓
8	With the presence of fragments using concrete images (Food) makes it easier for students to understand learning	✓
9	By using pancen media in teaching learning activities can cultivate the spirit and enthusiasm of students	✓
Amount		36
Percentage		100%

Source: The Researchers

Based on the table, the result of the lifting value of 100% is obtained, with the criteria for the practicality of the cutting can be seen in the table below:

Table 4. Product practicality criteria

No	Score Percentage (%)	Practicality Level
1	$P > 80$	Very practical.
2	$60 < P \leq 80$	Practical
3	$40 < P \leq 60$	Pretty practical.
4	$20 < P \leq 40$	Less Practical
5	$P \leq 20$	Not Practical

Source: (Hanisah, 2022, pp. 6-16)

It can be seen from the practicality criteria table of the product that it is with a percentage score of 100%, then it can be drawn a conclusion if the media can be in the category "Very Valid"

Table 5. Pancen media practicality results

No	Validator	Persentase	Categori
2	Student Response (<i>one to one</i>)	88,28%	Very practical.
3	Student Response (<i>Small Group</i>)	84,56%	Very practical.

Source: The Researchers

Based on the above table results from the elevation response students one to one obtained a percentage value of 88.28%, and the result of elevation sheet response students small group obtaining a percentual value of 84,56%, based on the criteria of deduction of the practicality of the product contained in table 4 then from that it can be concluded that the medium of the pan developed can be categorized as "Very Practical" The results of the research in this development are the media pancen.

The pancen is an abbreviation of the simple fraction board. This medium is in the shape of a board with the size of 60 x 80 covered with a black fabric besides there are pieces - fractional pieces with a different picture of concrete object - different on each piece of the fragment is also equipped with magnets. With the presence of magnetic images and on every piece of fragment can attract the student's interest.

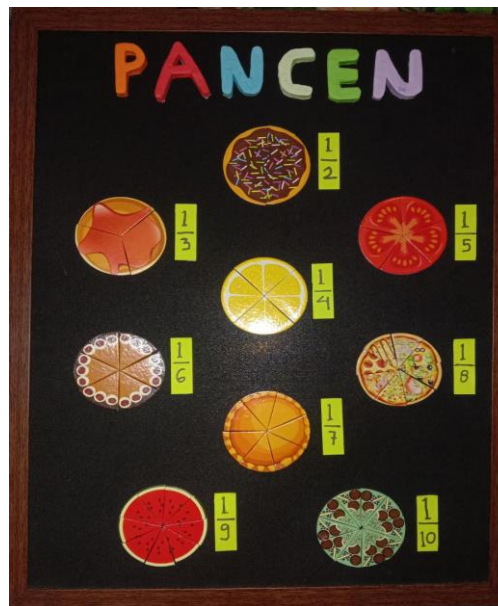


Figure 1. Pancen media

This research uses the ADDIE model: analysis, design, development, implementation, evaluation. This product has been completed through a phase of evaluation by expert validators who are already competent in product development. Based on the results of the evaluation of the validator of the material expert, the media expert validator, the teacher response lift, the student response lift one to one, the response lift of the small group students that have been discussed earlier, the conclusion can be drawn that the media that has been developed can be declared valid and practical use in learning.

CONCLUSION

Based on the results of the research that has been carried out, it can be concluded that the development of products in the form of pancen media on fractional material is declared valid and practical, while the conclusions from the development of pancen media can be seen from the validity assessment of expert validation results. The media expert validation results obtained a percentage of 100% categorized as "Very Valid", then the results of the material expert Validation assessment obtained a percentage of 91.66% categorized as "Very Valid" and the product practicality assessment was seen from the results of distributing response questionnaires to teachers and students one to one or in small groups.

The results of the teacher response questionnaire assessment obtained 100% in the category "Very Practical", the student response questionnaire (one to one) obtained 88.28% in the "Very Practical" category, then the results of the student response questionnaire (small group) obtained 84.56% in the category "Very Practical" Based on these two aspects of validity and practicality, it can be concluded that the "development of Pancen media in mathematics learning for grade 3 elementary school students" that was developed is valid and practical for use in the learning process. This research only involved students in grade 3 of elementary school, and this research was only valid and practically not yet effective. It is hoped that future researchers can gain additional knowledge in designing more creative and innovative learning media. And can involve many other students and can carry out research that is valid, practical and effective.

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