

Development of E-Flash Cards to Stimulate the Literacy Skills of Group B Children

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Abstract

The study aims to describe the feasibility of E-Flash Card learning media as a medium learning to stimulate the literacy ability of group B children and describe the effectiveness of E-Flash Card media in stimulating capabilities child literacy group B. The study method used is the Research and Development (R & D). The results of this study obtained an average pre-test score of 37.22 and an average post-test score of 80.55, indicating that the development of E-Flash Cards can be an effective method to stimulate the literacy skills of group B children. The E-Flash Card media is said to be feasible based on validation from media experts, material experts, and teacher responses. Validation from media experts obtained 100% Eligibility Percentage, Validation from Material Experts Obtaining a Percentage 100% eligibility, and responses from teachers obtain a percentage of eligibility 100%.

A. Introduction

Early childhood education is the level of primary education, where education given to children from birth to the age of six years and carried out with stimuli (Ardoin & Bowers, 2020; Meriem et al., 2020). Education in early childhood basically includes all efforts and actions taken by educators and parents during the care, upbringing and education of the child. It starts with creating an atmosphere and environment in which the child can explore that experience enable them to observe, imitate, and understand what they are learn from their environment (Iftitah & Anawaty, 2020; Weda et al., 2024; Wolf, 2020).

Early childhood education is a basic education for children, before the child enters the education level Next. As basic education, the implementation of education for early childhood must be effective and efficient. One component that will influence the effectiveness and efficiency of the learning process is the use of learning media (Fajri et al., 2022; Rupnidah & Suryana, 2022).

Based on the results of pre-observation at Kemala Bhayangkari 26 Kindergarten in Bengkulu City. The learning media used by teachers in the learning process are books, so in the process of stimulating child development is still not optimal. When the teacher introduces letters to the child, the child will quickly feel bored, due to lack of interest in recognizing letters that are conveyed only through book. So that updates must be made to existing media to be more pull

From the description above, research was carried out on the development of a product E-Books inspired by Flash Card learning media. Development this Flash Card media will be developed into an "E-Flash Card" product. As we know that flash cards are generally in the form of word cards printed pictures, which are used to teach children about language (Kusumawardhani, 2019; Numaningsih, 2021). Flash cards are an alternative for developing language, which can be used by children who have difficulty expressing their ideas (Febiola & Yulsyofriend, 2020; Noor, 2024). The update that researchers will do is to make it in the form of digital books "E-Book" and also learning videos which will later. The researcher will design as attractive as possible, and the researcher will add sounds on each Flash Card sheet. Based on this, it is

necessary to do Research Development of E-Flash Card as a learning medium for improve the literacy ability of group B children skills.

Based on the description above, research was carried out to describe the feasibility and the effectiveness of E-Flash Card learning media as a medium learning to stimulate the literacy ability of group B children.

B. Research Methods

The study method used is the Research and Development (R&D). The sample uses 1 class which. This research was carried out on January 8, 2024, which took place at Kemala Bhayangkari 26 Kindergarten in Bengkulu City, and this research lasted for 1 week. The scope of this study is grade B1 children in Kemala Bhayangkari 26 Kindergarten in Bengkulu City.

Research procedure (steps used):

1. Potential Problems
2. Data Collection
3. Product Design
4. Design Validation
5. Design Revision
6. Product Trials
7. Revision
8. Large Group Trials
9. Revision
10. Mass Production

Data collection techniques

1. Questionnaire
2. Tests

Research instruments

1. Questionnaire Sheets
2. Test Sheets

To calculate the level of comparison in this study, researchers used the T Dependent test formula (Paired Sample T-Test). The limitation in this study is time, because in this study I looked at whether the media I developed could stimulate children's literacy or not

C. Results and Discussion

Here are the results that the development of E-Flash Card media as a medium learning in improving the literacy ability of group B children.

Media Expert Validation

Validation results by media expert, Dr. Fitri April Yanti, M.Pd, The initial product can be seen in Table 1 below:

Table 1. Media Expert Validation Assessment Results

Assessment Indicators		Material	Score	Average per aspect	Precentage
Physical Aspect	1.	The cover image matches the content of the material	4	4	100%
	2.	The attractiveness of E-Flash Card media	4		
	3.	The colors used are attractive	4		
Utilization Aspect	4.	E-Flash Card media is easy to carry anywhere and practical	4	4	100%
Image illustration aspect	5.	Clarity of letters in the image	4	4	100%
	6.	Clarity of animal images	4		

Assessment Indicators		Material	Score	Average per aspect	Precentage
	7.	The colors used attract children's attention	4		
Design aspect	8.	The images used are appropriate to the child's development	4	4	100%
	9.	Images are easy to understand	4		
	10.	Match the layout to the image	4		
	11.	The size of the letters is appropriate to the development of group B children	4		
Manufacturing Technique	12.	Accuracy (does not give rise to misunderstandings)	4	4	100%
Total			48	20	500%
Average Score			4	4	100%
Information			Very Worth It		

Based on Table 1, the assessment carried out by media expert validators shows that aspect 1 regarding the physical aspect obtained a feasibility percentage of 100%, aspect 2 regarding the utilization aspect obtained a feasibility percentage of 100%, aspect 3 regarding the image illustration aspect obtained a feasibility percentage of 100%, aspect 4 regarding the design aspect obtained a feasibility percentage of 100%, and aspect 5 regarding manufacturing techniques obtained a feasibility percentage of 100%. The total assessment score is 48 out of 12 assessment indicators. The average rating of media expert validators is 4 with a percentage of 100%. Data from media expert assessment analysis can be seen in the graph below:

Material Expert Validation

The results of validation by material expert, Dwi Lyna Sari, S.Pd., M.Pd, on the initial product can be seen in table 2 below:

Table 2. Material Expert Validation Assessment Results

Assessment Indicators		Material	Score	Average per aspect	Precentage
Fill in the E-Flash Card	1.	This E-Flash Card provides learning to improve the literacy skills of group B children	4	4	100%
Presentation	2.	E-Flash Cards are designed to be simple and clear	4	4	100%
	3.	Compatibility with literacy development group B	4		
	4.	The appearance of the E-Flash Card is attractive	4		
Total			16	8	200%
Average Score			4	4	100%
Information			Very Worth It		

Based on Table 2, the results of the assessment carried out by the material expert validator show that aspect 1 regarding the contents of the E-Flash Card obtained a feasibility percentage of 100%, and aspect 2 regarding presentation obtained a feasibility percentage of 100%. The total assessment score obtained was 16 from the 4 assessment indicators. The average assessment of material expert validators is 4 with a feasibility percentage of 100%.

Validation of Teacher Responses

The results of validation by the Class B1 Teacher of Kindergarten Kemala Bhayangkari 26 Bengkulu City, Maya Puspasari, S.Pd., Gr, on the initial product can be seen in table 3 below:

Table 3. Kemala Bhayangkari 26 Kindergarten Teacher Assessment Results, Bengkulu City

Assessment Indicators	Material	Score	Average per aspect	Percentage
Fill in the E-Flash Card	1. This E-Flash Card provides learning to improve abilities literacy of group B children	4	4	100%
Presentation	2. E-Flash Card is designed simply and also clear	4	4	100%
	3. Suitability to the literacy development of group B	4		
	4. The images used are clear and easy understood	4		
	5. The letters used are clear and easy understood	4		
	6. The colors used attract attention child	4		
Total		24	8	200%
Average Score		4	4	100%
Information		Very Worth It		

Based on Table 3, the results of the assessment carried out by the Kemala Bhayangkari 26 Kindergarten teacher in Bengkulu City show that aspect 1 regarding the contents of the E-Flash Card obtained a feasibility percentage of 100%, and aspect 2 regarding presentation obtained a feasibility percentage of 100%. The total assessment score obtained was 24 from 2 assessment indicators. The average assessment of material expert validators is 4 with a feasibility percentage of 100%.

The following is data on the pre-test and post-test results from group B1 children in the field trial, which will be explained in Table 4 and Table 5.

Table 4. Pre-Test Value Results

No	Name	Amount	Mark	Information
1.	AS (andin)	11	55	MB
2.	AKA (arsen)	12	60	MB
3.	ANS (arumi)	10	50	BB
4.	BAA (belva)	8	40	BB
5.	FBNG (felix)	4	20	SBB
6.	MJ (justin)	5	25	SBB
7.	MVFB (eza)	6	30	SBB
8.	NPF (nayla)	6	30	SBB
9.	RNZ (raira)	5	25	SBB
Amount		67	335	
Average		7,44	37,22	

Table 5. Post-Test Score Results

No	Name	Amount	Mark	Information
1.	AS (andin)	20	100	BSB
2.	AKA (arsen)	19	95	BSB
3.	ANS (arumi)	19	95	BSB
4.	BAA (belva)	19	95	BSB
5.	FBNG (felix)	14	70	BSH
6.	MJ (justin)	13	65	MB
7.	MVFB (eza)	14	70	BSH
8.	NPF (nayla)	16	80	BSH
9.	RNZ (raira)	11	55	MB
Amount		155	725	

No	Name	Amount	Mark	Information
	Average	17,22	80,55	

Based on the data in Table 4 and Table 5, we can see that the average pre-test score is 37.22 and the average post-test score is 80.55. This shows that the post-test score is higher than the pre-test score, so there is an increase in children's literacy skills after using E-Flash Card media.

The pre-test and post-test value data will be analyzed using the dependent t test (paired sample t-test) with a significance level of 0.05. This analysis technique is used to determine whether there is a significant effect from the treatment (use of E-Flash Card media) on the literacy abilities of group B children.

The first step is to create H_a and H_0 in sentence form

H_a : There is a significant difference in the literacy abilities of group B children between before and after using E-Flash Card media.

H_0 : There is no significant difference in the literacy abilities of group B children between before and after using E-Flash Card media.

The second step calculates the comparison of pre-test data and post-test data using the dependent t test formula (Paired Samples T-Test).

Table 6. Results of Comparison of Pre-Test Data and Post-Test Data Using SPSS

Paired Samples Statistics									
		Mean	N	Std. Deviation	Std. Error Mean				
Pair 1	Pre Test	37.2222	9	14.60118	4.86706				
	Post Test	80.5556	9	16.28735	5.42912				
Paired Samples Correlations									
				N	Correlation	Sig.			
Pair 1	Pre Test & Post Test			9	.875	.002			
Paired Samples Test									
Paired Differences									
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre Test - Post Test	-43.33333	7.90569	2.63523	-49.41019	-37.25648	-16.444	8	.000

The third step is conclusion

H_a : There is a significant difference in the literacy abilities of group B children between before and after using E-Flash Card media.

H_0 : There is no significant difference in the literacy abilities of group B children between before and after using E-Flash Card media.

Based on the results of the dependent t test (paired samples t test), it can be concluded that there is a significant difference in the literacy abilities of group B children between before and after using E-Flash Card media. This can be seen from the conversion of literacy skills, where the average post-test score for children is 80.55. If the average pre-test and post-test scores are compared, the post-test average score is higher than the pre-test average score. Therefore, it can be concluded that E-Flash Card media is suitable for use to improve the literacy skills of group B children.

1. Potential and Problems

In the process of development, the resulting products are an eBook or digital book and learning video with a theme "Animals" aimed at developing abilities child literacy group B. To identify potential and problems in the field, researchers made observations at Kemala Kindergarten Bhayangkari 26 Bengkulu City. The

results of the observations show that E-Flash Card media has never been used as a learning medium at Kemala Bhayangkari 26 Kindergarten in Bengkulu City. Based on potency and identified problems, researchers intend to develop E-Flash Card as a learning medium that can later be used to improve the literacy ability of group B children.

In introducing or improving abilities Early Childhood Literacy Teachers Still Use Media in the Form of Books only, without any other media that can increase children's interest in studying it. The hope is that with this E-Flash Card media can increase children's attractiveness in learning literacy by Fun media. Given the development of the times that is getting more and more rapid. Teachers are required to be creative in utilizing existing gadgets. The usefulness of gadgets is not only used for play, but gadgets can also be used as learning media, especially to improve children's literacy skills.

One of the factors researchers in developing E-Flash media Card because gadgets can be taken anywhere. Besides being easy to carry, this E-Flash Card can also be accessed in various places. So that Its utilization is more optimal, and can also minimize children to play games.

2. Data Collection

Next, researchers collected data through analysis of review relevant research, and conduct direct observations in field. The observation was conducted at Kemala Bhayangkari Kindergarten 26 Kota Bengkulu, the results show that learning media is still not diverse, especially in introducing literacy. Learning media What is used is only in the form of print media.

Then, researchers collected data on flash cards that It's on the Internet to see the difference from flash card development which researchers did before. Here are some pictures Flash cards obtained from the internet:

Based on potential issues identified, and data that has been collected, then the product design stage is carried out to E-Flash Card learning media with the aim of improving child literacy group B. Part of the content of this book aims to Introduce children to the names of animals.

3. Product Design

E-Flash Cards are developed using the Canva application and Flip PDF Corporate Edition. The book contains pictures of animals, animal sounds, letters of the alphabet, and vocabulary of animal names Designed with attractive colors for children aged 5-6 years. E-Flash Card used as a learning medium that hopefully can improve the literacy ability of group B children.

4. Design Validation

After completing the initial product E-Flash Card as a medium learning to stimulate group children's literacy abilities B, a validation process is carried out by several experts, namely media experts, and experts material. This validation process is carried out twice, first for the initial product and secondly after improvements are made to perfect the product revised beginning. Here are the results of product validation by the expert:

5. Product Revisions

After going through a validation process by media experts and material experts, there are various suggestions given by validators. Suggestions that given can be a guide in revising the design product. Here are some suggestions for revisions described in the following Detailed:

a) Media Expert

Improvements from media experts for improvements to this E-Flash Card, that is, the addition of sounds to the image of the animal so that the animal is more pull.

b) Material Expert

Improvements from material experts in the form of suggestions in changing colors in the letter E-Flash Card, whose original color is white, is recommended to change it to black, so that the letters look clearer and Easy to read.

6. Limited Trial

Product testing is conducted on a limited basis to learners in Kemala Bhayangkari Kindergarten 26 Bengkulu City on January 18, 2024. Through the participation and enthusiasm of the learners in trying and Take tests on products that have been developed. Results show that this E-Flash Card media is feasible in improving capabilities literacy of group B children at Kemala Bhayangkari Kindergarten 26 Kota

Bengkulu. Scores obtained from student test results and media E-Flash Card proves the feasibility of the product.

Results from limited trials showed a positive response from students and teachers, so this is an advantage for Researchers. Despite the positive response received, there are some suggestions delivered by teachers who have a positive impact on product development. Suggestions submitted related to improvements in the image view. The main focus of the product is children aged 5-6 years, so that the display of attractive images will be more effective in Attract the attention of children.

Through observations made at Kemala Bhayangkari 26 Kindergarten Bengkulu City on the literacy ability of group B children, can It is concluded that the use of E-Flash Card learning media in The learning process is very liked by children, because it sees enthusiasm given. This media also has a positive influence in stimulating children's literacy abilities. Children looked better able to understand letters, spell words, read words, and write word.

Based on the data analysis carried out, it can be concluded that the developed E-Flash Card media is very feasible accordingly with assessments conducted by media experts, subject matter experts, and teachers. This E-Flash Card was developed following the development procedure the right one. The results showed that E-Flash Card media Suitable for use in improving children's literacy skills group B.

E-Flash Card development can be an effective method for improve the literacy skills of group B children. Here are some discussions of the development of E-Flash Card; First, Design; E-Flash Card in Design attractively and interactively so that children feel interested and engaged in literacy learning process. For example, adding sounds and animations that attracted their attention. Second, Content; The content in the E-Flash Card is appropriate to the age level of the child group B, and use interesting images. Third, pronunciation; E-Flash Cards have a voice feature that is used to train children's language skills. Fourth, Flexibility and Accessibility; E-Flash Card accessed via device electronics such as laptops or mobile phones.

Flash Card media is a form of visual media in the form of Picture cards ([Kurniati et al., 2023](#); [Santika et al., 2023](#)). Flash Card media can stimulate children to get to know faster Literacy (Matruty & Que, 2021; Wani et al., 2023). While the media that I developed is E-Flash Card, which Where this media is also the same as flash cards, both visual media are in the form of Picture cards. The difference is the media that I developed I created it by adding sound features to each image, and an e-flash card this is not printed but packaged in the form of E-Books or Story Books.

The results of the research I conducted support the research entitled "The Ability to Recognize Early Literacy Through Flash Card Media at the age of 5-6 Year" conducted on group B RA Al-Wathoniyah Wargabinangun Kaliwedi Cirebon. The results of this study formulate if through Flash Card media can improve a child's early literacy. With the development of this eflash card learning media, it can help children stimulate their literacy abilities, and also this media attracts the attention of children more in the learning process, compared to the usual media. This E-Flash Card media can be accessed through YouTube video links, and via PDFs shared on WhatsApp.

The impact of this study is, the product that the researchers made can stimulate the literacy ability of group B children, with the updates provided, can make children's literacy skills develop faster

The limitation in this study is time, because in this study I looked at whether the media I developed could stimulate children's literacy or not.

For future research, it is recommended to develop E-Flash Cards with different themes in order to be able to improve its learning process, to do further development of E-Flash Card media in particular, and to apply E-Flash Card media in the learning process So that children's development is able to develop optimally

D. Conclusion

E-Flash Card media has effectiveness based on pre-test data and also Post-test, where the average pre-test score is 37.22 and the average posttest score is 80.55. Because the post-test score is higher than the pre-test score. So, that this media can stimulate children's literacy abilities. This E-Flash Card media is said to be feasible based on validation from media experts, material experts, and teacher responses. Validation from media experts obtained 100% Eligibility Percentage, Validation from Material Experts Obtaining a Percentage 100% eligibility, and responses from teachers obtain a percentage of eligibility 100%.

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