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DEVELOPMENT OF MAGNETIC ROULETTE MEDIA BY USING DISCOVERY LEARNING FOR THE INTRODUCTION OF SYMBOLS 1-10 IN CHILDREN AGED 4 - 5 YEARS AT HIDAYATUS SHIBYAN KINDERGARTEN SURABAYA

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Abstract

This study aims to develop and evaluate the feasibility of a learning product in the form of Roulette Magnet media to introduce number symbols 1–10 to children aged 4–5 years at Hidayatus Shibyan Kindergarten Surabaya. The learning media is designed using the Discovery Learning model to support meaningful learning experiences that engage children in recognizing numerical symbols through play-based activities. The research adopts a development research design using the 4D model (Define, Design, Develop, and Disseminate). Data were collected through validation sheets, observation, questionnaires, and product trials involving material experts, media experts, teachers, and students. The effectiveness of the Roulette Magnet media was tested using the N-Gain formula, which indicated an increase in students' understanding from pre-test to post-test scores with an overall gain of 0.597, categorized as moderate. These findings suggest that the media can effectively enhance children's cognitive abilities in number recognition. Furthermore, expert assessments and practitioner feedback confirmed that the media is valid, practical, and suitable for use in early childhood learning. The study concludes that Roulette Magnet is an effective and feasible educational tool to improve numeracy readiness in early learners.

Keywords: early childhood education, number symbols, roulette magnet, discovery learning, learning media

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INTRODUCTION

Early childhood, especially between the ages of 0–6 years, is a critical period in cognitive development often referred to as the "golden age." During this stage, a child's brain develops rapidly and responds intensely to environmental stimuli. Information received is retained more effectively, forming the foundation for long-term learning. Santoso (2019) emphasized that the golden age only occurs once in a lifetime and serves as a determinant of an individual's future quality. Therefore, any educational intervention provided during this phase must be optimal, developmentally appropriate, and engaging (Suttrisno, 2023).

In cognitive development, a child's ability to understand numerical concepts is a key aspect of early numeracy. Blom (Gunawan & Palupi, 2016) explains that approximately 50% of intelligence is developed by age four, and up to 80% by age eight. (Wiyani, 2016) supports this by stating that cognitive factors play a crucial role in effective learning, particularly because most early learning activities are closely tied to memory and symbol recognition. These include recognizing shapes, colors, patterns, and especially

number symbols. This highlights the importance of introducing number concepts in a meaningful and playful way.

Preliminary observations conducted at TK Hidayatus Shibyan Surabaya revealed a gap in number symbol recognition among children aged 4–5 years. Many of the students displayed confusion when asked to count or recognize number symbols from 1 to 10. They often reversed the sequence or misidentified the symbols. This learning gap indicates the need for an innovative teaching strategy that aligns with the characteristics of young learners, who benefit most from interactive, visual, and hands-on learning experiences.

Mastery of number symbols is foundational in preparing children for broader mathematical concepts in later education. Rakhmawati et al., (2019) assert that understanding numbers early on forms the basis for future mathematical literacy. (Rasmani et al., 2023) also states that number concepts are central to everyday life, including time, measurement, money, and data. Hence, introducing numbers at an early age is essential, but the method must be engaging, accessible, and designed according to the child's cognitive abilities.

One learning model that supports active engagement and concept discovery is *Discovery Learning*. This model emphasizes exploration, experimentation, and self-guided understanding. According to Bruner (Hapsari & Yuliana, 2022), Discovery Learning allows children to interact with their environment and make discoveries that lead to deeper understanding. (Adora, n.d., 2016) found that Discovery Learning significantly enhances critical thinking and concept acquisition in early childhood mathematics.

Beyond the learning model, the use of appropriate media plays a vital role in early childhood education. The *Magnetic Roulette*—a modified version of a classic spinning wheel game—combines colors, symbols, and tactile interaction. Chalimah (2022) found that educational game-based media increased student motivation and participation, particularly in numeracy activities. The physical interaction with the media supports children's fine motor development and reinforces cognitive connections (Ibda, 2015).

The *Magnetic Roulette* encourages multisensory learning: children spin, see, touch, and say the number pointed to. (Riyani, 2019) concluded that when children engage in tactile, playful learning using manipulatives, they better internalize number concepts. The fun and gamified format also reduces anxiety around numbers and builds a positive association with mathematics.

Purpura et al., (2018) also discovered a strong link between early literacy and numeracy development. Their study supports the integration of interactive and contextual learning experiences that support both domains. In early childhood education, meaningful number symbol recognition must go beyond rote memorization—it requires planned instruction that is responsive to children's developmental stages and interests ("Picture Storybook on the Language Development of Group B Children at Kindergarten Puri Surabaya," 2020; Siregar et al., 2020).

The implications of this type of learning are not only cognitive but also social-emotional. Group play using Magnetic Roulette promotes collaboration, turn-taking, communication, and shared problem-solving. (A. et al., 2022; Ahmad, 2024; Rochmah & Hasibuan, 2020) emphasize that literacy and numeracy instruction should be grounded in socio-constructivist learning where children learn through social interaction and cooperation.

Based on the analysis above, introducing number symbols to children aged 4–5 requires an integrated approach combining learning models and innovative media. The *Discovery Learning* model and *Magnetic Roulette* media work synergistically to provide an active, engaging, and meaningful learning experience. This study is crucial in developing a practical and impactful learning tool that can bridge gaps in early numeracy and support holistic child development.

RESEARCH METHOD

This study is a development research (Research and Development) employing the 4D model (Four-D Models), which consists of four stages: Define, Design, Develop, and Disseminate. The research was conducted at TK Hidayatus Shibyan Surabaya during the even semester of the 2024/2025 academic year. The research subjects included early childhood education lecturers (media and content experts), kindergarten teachers, and children aged 4–5 years. Data were collected using observation, documentation, questionnaires, and product testing. Instruments used included validation sheets, teacher and student response questionnaires, and assessment sheets of the ability to recognize number symbols 1–10. Data analysis involved calculating media feasibility, practicality, and effectiveness using Likert scales and the N-Gain formula (Riyanto, 2017).

RESEARCH RESULTS AND DISCUSSION

Result

The research conducted by the researcher is a type of research and development or R&D. This research is used to develop and validate products. The result of this research is a learning medium, namely, the *"Roulete Magnet*" learning media with the "*Discovery Learning" learning model* on the identification material of the number symbol 1-10 for early childhood 4-5 years old at Hidayatus Shibyan Kindergarten Surabaya. The design of research and development was carried out, in order to facilitate the preparation of the topic, namely, using a modification of the 4D development model adopted from Thiagarajan which consists of 4 steps, namely, *define*, design, development, and *disseminate*, which aims to determine the response of early childhood and the feasibility of the learning media "*roulette magnet*" in the teaching material for the introduction of symbols number 1-10. This stage of research is carried out only limited to the *development stage* of difficulties in understanding the concept of numbers.

1. Results of the initial study test

The results of the initial study conducted by the researchers, on Monday, March 28, 2025, aim to determine the level of achievement in the development of the ability of children aged 4-5 years in the introduction of the concept of numbers 1-10 before using learning media. The results of these initial observations are shown in the distribution table, as follows:

Table 1. Analysis of preliminary data on the development of the ability to recognize the number symbol in children aged 4-5 years at Hidayatus Shibyan Kindergarten Surabaya

Indicator	Preliminary Observation Results Ability to recognize the symbols of numbers 1-10				Jml	Average score	
	1	2	3	4			
a. Counting or saying the order of numbers 1 to 10,	-	20	15	-	35	2,3	8%
b. Designate the order of objects according to the numbers 1 to 10	3	22	3	-	33	2,2	5%

c. Connecting or pairing number symbols with objects up to 10	30	-	-	30	2	0%
Average Amount				98	2,2	4%

2. Media Feasibility Test

The media that has been created must go through the validation test stage, so that the media is effective to use. At this stage, before conducting a trial on students, the researcher validates the design of the learning media "*Roulette Magnet*" that has been made, to be validated by media experts, and material experts first, in order to correct shortcomings in the media to be displayed. In this case, the researcher refers to the suggestions and instructions of experts, so that the feasibility is known. The validation carried out by the expert is related to the relevance of the material and media design aspects developed by filling out a questionnaire on a scale of 1-4. Here is a recapitulation of the results of the expert validation:

a. Subject Matter Expert Validation

Validation of material experts is carried out with the aim of assessing the suitability of the learning material and the content of the material presented in the learning media"*Roulette Magnet".* Based on the results obtained from the validator of the material expert, then the results of the assessment are analyzed by calculating the percentage of the level of eligibility, as follows:

Table 2. Average recapitulation of the percentage of validation of subject matter experts on each aspect

No	Aspects	Total Score	Maximum Scroll	Percentage	Criterion
1	Material Accuracy	19	20	95%	Highly Worth It
2	Presentation of Materials"	22	24	92%	Highly Worth It
3	Literacy	11	12	92%	Highly Worth It
Average Percentage				93%	
Criterion				Highly Worth It	

Based on the results of the validation of the above material given to the material experts, it shows that the media displayed is effective with an average percentage of 93%, so that in this case the material aspect in the media "*Roulette Magnet*" can be said to be very decent. The results of the assessment, namely qualitative data from material experts in the form of comments and suggestions listed in the table, are below:

Table 3. Material Expert Comments and Suggestions

Validator	Comments and Suggestions for Improvement	Improvement Results
Material Expert	1. Choose the color of the image to be more striking.	1. The color has been corrected by using red, green, and orange.
	2. The display of the number symbol is enlarged.	2. The number display has been enlarged. By changing the size of the diameter of the disc on the media.
	3. Try to draw objects more clearly so that children can easily count them	3. The appearance of the image of the object has been clarified and enlarged.

The results of the validation of the material that have been carried out show that the teaching material on the "roulette Magnet" media is in accordance with the child's ability level and the display of images of objects around the child, making it easier for children to understand the concept of numbers 1-10.

b. Media Expert Validation

Media validation is carried out to determine the feasibility of the display and performance of learning media"*Roulette Magnet*" by using the learning model "*Discovery Learning",* developed, Based on the results obtained from the media validator, the next step is to analyze the data by calculating the percentage of the achievement rate, as follows

Table

Average Data on the Percentage of Media Expert Validation on Each Aspect

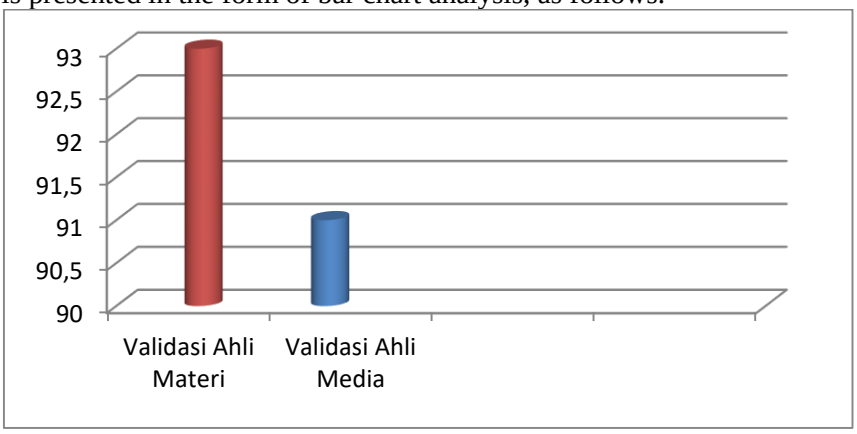
Aspects	Total Score	Maximum Scroll	Percentage	Criterion
Ease of use	19	20	95%	Highly Worth It
Visual Display	22	24	92%	Highly Worth It
Media characteristics	10	12	83%	Highly Worth It
Media Benefits	11	12	92%	Highly Worth It
Average Percentage			91%	
Criterion			Highly Worth It	

Based on the results of the media validation above, it shows that the media displayed is effective with an average percentage value of 91% with a valid category. Thus successful media development can be said to be very feasible, with some advice given by media experts. The qualitative data provided by media experts is in the form of suggestions for improvement, as follows:

Table 4. Media Expert Comments and Advice

Suggestions for the Validator daei	Design before Revision	Design after Revision
1. Less strong media materials, to be replaced with stronger materials		

The dissemination of data on the results of validation by material experts and media experts is presented in the form of bar chart analysis, as follows:



Picture
Comparison Bar Chart of Media Validation Results

Based on the results of the validation recap conducted by the two experts, it shows that, the development of learning media "*Roulette Magnet*" by using the learning model "*Discovery Learning",* developed by researchers, in order to improve the ability to recognize the concept of numbers 1-10 can be applied and effectively used in the learning process.

3. Field Trials

a. Practicality Test

1) Teacher's Response to the Learning Media "*Roulette Magnet*" with Using the Learning Model "*Discovery Learning*"

The product that has been validated by the validator is then tested on one of the educators at Hidayatus Shibyan Kindergarten Surabaya, in order to obtain information about the response of educators to the "*Roulette Magnet" media* that has been created and

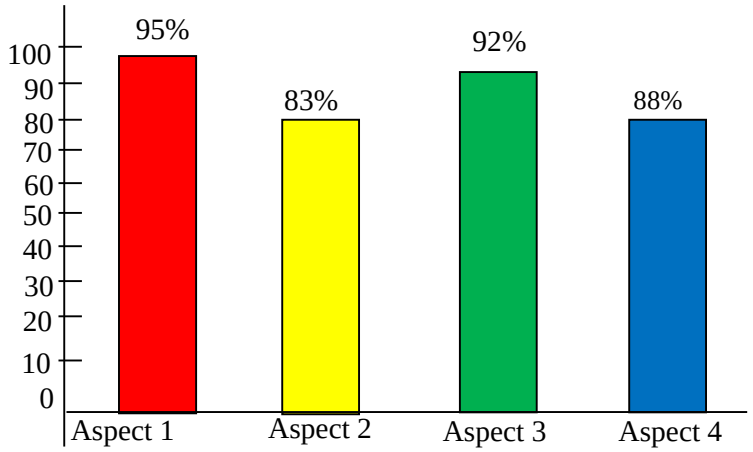
developed by the researcher to be tested on students aged 4-5 years on a large scale to find out the practicality and effectiveness of the media in the learning process of recognizing the concept of numbers 1-10. The results of the assessment of the teacher's response to the "*Roulette Magnet"* media, are presented in the table, below:

Table 5. Analysis of Teacher Response Data for Development Trials

es	Aspects	Total Score	Maximum Scroll	Percentage	Criterion
	Compatibility of material in KD's "*Roulette Magnet*" media	19	20	95%	Excellent
	Material Updates	20	24	83%	Good
	Material Accuracy	11	12	92%	Excellent
	Technical Quality	7	8	88%	good

Data Source: Research Data

The contribution table above, shows that each criterion has met the category of good and excellent. The highest score is found in the criteria for material compatibility in the media"*Roulette Magnet*" with a percentage of 95%. The dissemination of teacher response data for each aspect of the assessment in the development media trial is presented in the picture, as follows:



Picture
Response Assessment Bar Chart by Teacher

From the results of the assessment of educator responses in the bar chart image above, it shows that, judging from the assessment aspect of the suitability of the media with basic competencies (KD) an average percentage of 95% is obtained in the very good category, then the aspect of assessing material renewal reaches an average percentage of 83% in the good category, while for the aspect of assessing the accuracy of teaching materials reaches a high average, namely 92%, the next is the aspect of assessing the quality of tennis reaching 88% with the very good category. So that overall the aspect of educator response reached an average percentage of 89% with the category of very good. The student response questionnaire can be seen in the appendix.

2) Students' Response to the "*Roulette Magnet*" Learning Media by Using the "*Discovery Learning*" Learning Model

The development product has been revised based on input, suggestions, and comments from teaching media experts and teaching material experts. Furthermore, it was tested on 15 (fifteen) students aged 4-5 years who were registered as students in group A of Hidayatus Shibyan Kindergarten Surabaya. The large-scale trial is intended to obtain feedback on the performance of the media, when used by students, so that with this the weight of the practicality of the media that has been developed will be known. The results of the recapitulation of assessment scores from large-scale trials. The large group trial was carried out in two (two) meetings, which were detailed, as follows: The first trial meeting was on Tuesday, May 06, 2025, the second trial on Thursday, May 08, 2025.

Figure 4.5 Large Group Trial Photos

The large-scale trial that was carried out referred to the RPP (Learning Implementation Plan) which had been prepared using the learning model"*Discovery Learning*" supported by the use of media "*Roulette Magnet*". The purpose of carrying out large-scale trials is to find out the results of student responses and the practicality of using media."*Roulette Magnet*". In the learning process. The results of the trial can be seen at each meeting, below, as follows:

Table 6. Recapitulation of the Trial Assessment of Large Group Meeting 1

No	Aspects Observed	Observation Results			
		1	2	3	4
1	Media displays that attract children's attention			6	9
2	Children are actively involved in the learning process			10	5
3	Children are enthusiastic about learning			9	6
4	Kids love the media "*Roulette Magnet*"			11	4
5	Children love teaching and learning activities			8	7
6	Children participate in learning activities until they are finished			9	6
7	Children can use media easily			6	9
8	Children can clearly see the display of numbers and images in *the Roulette Magnet media*			1	14
9	Kids love the color display on *the Roulette Magnet media*			1	14
10	Children easily understand teaching materials			10	5
Sum				13	16
Total		529			

Based on the results of the assessment through the observation sheet, it can be known that large group trials on the "*Roulette Magnet*" media have been developed, as follows:

$$P = \frac{f}{N} \times 100\%$$

:

$$= \frac{529}{15x(10x4)} \times 100\%$$

= 88%

The average result of the percentage of media "*Roulette Magnet*" by using the learning model "*Discovery Learning"* achieved an average of 88% which was overall very good qualifying. Qualitative assessment, according to students, is that students are greatly helped by the existence of media" *Roulette Magnet*"Developed, children feel more active in the learning process, when the learning process using media "*Roulette Magnet*". In order to obtain maximum results, the trial was carried out for the second time.

2) Large-scale trial on day two

Table

Recapitulation of the Assessment of the Large Group Trial Meeting 2

No	Aspects Observed	Observation Results			
		1	2	3	4
1	Media displays that attract children's attention			3	12
2	Children are actively involved in the learning process			5	10
3	Children are enthusiastic about learning			7	8
4	Kids love the media "*Roulette Magnet*"			1	11
5	Children love teaching and learning activities			2	13
6	Children participate in learning activities until they are finished			1	11
7	Children can use media easily			3	12
8	Children can clearly see the display of numbers and images in *the Roulette Magnet media*			1	14
9	Kids love the color display on *the Roulette Magnet media*			1	14
10	Children easily understand teaching materials			8	7
Sum				6	48
Total				544	

Furthermore, in order to obtain the average percentage of assessment results for the media"*Roulette Magnet*"which has been developed as a whole in this second large group trial, the acquisition of observation data is calculated the success rate, as follows

$$P = \frac{f}{N} \times 100\%$$

:

$$= \frac{544}{15x(10x4)} \times 100\%$$

= 91%

Based on the results of the assessment of filling out the observation sheet of findings in the field, it was found that students really liked the learning activity of getting to know the concept of numbers using the "*Roulette Magnet*" media which was very attractively designed, and very easy to use and has been modified with the "*Discovery Learning*" learning model" which is implemented through seller and buyer transactions. For the provisional conclusion that the researcher obtained in the field trial in this large group, in general children like the media template, children can easily follow the steps to use the media well and the child understands the examples given by the teacher, as a whole the child is involved in the learning process. Based on the results of the assessment through the observation sheet of children's activities during learning which reached 91%, and if converted on average, this percentage is in the category of very good, so it does not require revision.

3) Data on the Effectiveness of the Use of "*Roulette Magnet" Media.*

The effectiveness of the use of media "*Roulette Magnet*". Obtained from the results of the initial score before using the media "*Roulette Magnet*". and the final value after using the media"*Roulette Magnet*". Effectiveness of use "*Roulette Magnet*", in the learning process, can be reviewed from the learning results obtained by students. If in the learning process the learning outcomes obtained by students have increased, then it can be said, the media "*Roulette Magnet*". effective to use in the learning process. The following are the results of the N-Gain analysis of the value *pre-test* and *post-test.*

Table 7. Analysis of N-Gain Pre-Test and Post-Test Values

No	Student Name	Pre-test	Post-test	N-Gain
1	Akbar	8	11	075
2	Azka	5	11	0,86
3	Alief	7	9	0,5
4	Fanny	6	9	0,5
5	Caliph	5	10	0,7
6	Kevin	6	10	0,67
7	Jafran	6	11	0.8
8	Nothing	5	8	0,4
9	Nuha	6	10	0,8
10	Yanu	6	9	0,5
11	Salvo	6	9	0.5
12	Dentra	6	9	0,5
13	Life	8	10	0.5
14	Azriel	5	9	0,57
15	Widad	7	9	0,4
Total		92	144	8,95
Average		6,1	9,6	0,597

Data source: Value results *pre-test* and *post-test*

Value data *pre-test* and *post – test* is then analyzed using the normality of gain (*N-Gain Score*). Here are the N-Gain scores from the large-scale trial:

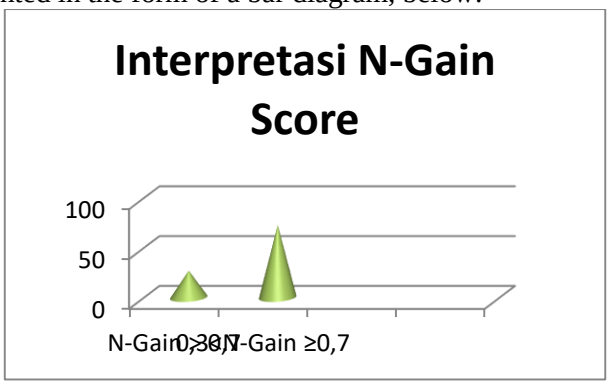
Table 8. Recapitulation of N-Gain Scores of Students.

Large Value N-Gain	Interpretasi	Number of Students	Percentage
N-Gain > 0.7	Tall	4	27%
0,3<N-Gain ≥0,7	Keep	11	73%
N-Gain ≤ 0.3	Low	-	-

Average N-Gain	0,597
Installment-Installment *Pre-Test*	6,1
Post-Test Average	9,6

Data Source: Learners' N-Gain Analysis Data

Based on the recapitulation table above, it shows that the average N-Gain score of the majority of students is in a moderate interpretation, with an average gain above 0.3. There were 4 (four) students who received high interpretation and there were no students who were in low interpretation. The table above also shows the comparison of the average increase in the value *Pre-test* and *post-test* The students who originally reached 6.1 after the treatment increased to an average of 9.6. To make it clearer, the results of the N-Gain score test are presented in the form of a bar diagram, below:



Picture
Bar chart of interpretation of N-Gain Score test results

Based on the diagram image above, it can be seen that the results of the N-Gain Score of students who obtained a score with a high category were 4 (four) students, with an N-Gain score range of > 0.7, and for the medium category with a range of 0.3< N-Gain ≥0.7 there were 11 (eleven) students, while for the category with an N-Gain range of ≤ 0.3, it was not visible. Increased value *Pre-test* and *post-test* overall by 0.597 in a moderate interpretation. So based on the analysis of the N-Gain test, it can be seen that there is an increase in the value of *Pre-test* and *post-test*, after using learning media "*Roulette Magnet*" by using the learning model "*discovery learning"*.

4) Dissemination Stage

The process of developing learning media "*Roulette Magnet*". produced at the end of the research, then distributed to teachers/educators at Hidayatus Shibyan Kindergarten Surabaya. In this development research, it only reaches the stage of *development*. The disseminate stage has not been carried out. With the end of this development research report, the dissemination of media will be carried out in the form of a file.

Discussion

In this section, the discussion of the results of the research on the developed product is described, namely in the form of learning media "*Roulette Magnet*". The development of the media has been adjusted to the existing problem, namely the lack of ability of children aged 4-5 years to recognize the symbol of numbers from 1-10. This condition occurs because the material on the introduction of the concept of numbers 1-10 is only taught textually using package books and LKPD, so that the child's understanding of the concept of numbers 1-10 is memorable, for example children are able to say the symbols of the numbers 1-10 sequentially, if done at the same time. However, if children are asked to say in turns and slowly, it can be seen that some children are still not in order

to say the order of numbers 1-10. Referring to the existing problems, the researcher developed a learning media "*Roulette Magnet*", which can meet the quality in terms of feasibility and practicality.

a. Qualification of the learning media "*Roulette Magnet*", with the learning model "*Discovery Learning*" on the Introduction of the Number Symbol 1-10 in Children Aged 4-5 Years

Referring to the results of the validation that has been implemented, products in the form of learning media"*Roulette Magnet*" by using the learning model "*Discovery Learning*". What has been developed is in the category of very feasible to be used in the teaching and learning process, this is in accordance with the results of validation data, which is filled in by UNESA postgraduate lecturers. The results of the validation of media experts stated that the media "*Roulette Magnet*" by using the learning model "*Discovery Learning*". In the aspect of ease of use reaching an average percentage of 95% which is included in the very feasible category, and for the aspect of display of viasul reaching 92% in the very feasible category, then for the aspect of media characteristics it obtains an average percentage of 83%, and the last is the aspect of media benefits reaching 92% of the value in the very feasible category. The average achievement of this percentage, in line with the media eligibility requirements, if the average percentage interval is obtained of 81 – 100%.

Furthermore, the validation is carried out by a material expert, in the validation of the material, the researcher does 1 (one) time. The results of the validation of the material experts showed that the aspect of the accuracy of the material obtained an average percentage value of 95% with the very feasible category, for the presentation of the material reached an average of 92% also in the very feasible category, and subsequently the literacy aspect reached 92% including the very feasible category. The overall results of feasibility validation from subject matter experts got an average percentage score of 93%, with the category of very feasible. This is in line with the media feasibility requirements that have been set, which is at an average interval of 81-100%. So the products in the form of learning media that are developed are very feasible.

The results of the analysis of the media experts and material experts above, show that, the learning media of learning media "*Roulette Magnet*" by using the learning model "*Discovery Learning*"What has been developed has met one of the criteria for media that is said to be feasible in accordance with the success indicators, namely having a decent level of suitability both in terms of the presentation of material in the media, or media design. This statement is supported by the opinion of (Arikunto, 2014), that learning media is concluded to be valid, if the results are in accordance with the criteria or have an alignment between the results obtained and the set criteria.

b. The practicality of the "*Roulette Magnet*" learning media, with the "*Discovery Learning" learning model* on the Recognition of the Number Symbols 1-10 in Children Aged 4-5 Years

Products in the form of learning media "*Roulette Magnet*" by using the learning model "*Discovery Learning*", which has gone through the validation stage and has met the eligibility requirements, then the product is tested in the field. The trial is aimed at finding out the level of practicality of the product that has been developed, which is carried out through a questionnaire of teacher/educator responses and the results of filling out an observation sheet of student activities when participating in the learning process. The results of the practicality test stated that, the learning media "*Roulette Magnet*", the trials at the first meeting reached an average of 80% in the practical category and increased at the second meeting trial by 91% in the practical category. The practical test was carried out with a large number of respondents, namely 15 (fifteen) students, and showed a response

with an average percentage of 86%. In accordance with the theory that states that, the response of students is said to be very practical, if it is at an interval of 80-100%

The statement written on the validation sheet contains responses in the form of suggestions and criticisms from the respondents given, for example, learning media "*Roulette Magnet*" by using the learning model "*Discovery Learning*" very interesting and creative. There is also input in the learning media"*Roulette Magnet*", such as media materials are not strong and have been improved by re-crushing cardboard materials into wood with contrasting and striking colors, so that students are interested and interested in using learning media"*Roulette Magnet*" in the learning process. The learning process using learning media "*Roulette Magnet*"Students are actively involved in the learning process, so that students can easily absorb teaching materials better (Surrey, 2018; Zaman, 2019).

c. The effectiveness of the "*Roulette Magnet*" learning media, with the "*Discovery Learning" learning model* on the recognition of symbols numbers 1-10 in children aged 4-5 years.

To test the effectiveness of the media, the researcher conducted a study with 3 (three) meetings for large-scale trials. The research conducted refers to the lesson plan prepared using the learning model "*discovery learning*". The purpose of large-scale trials is to find out the results of student responses and the effectiveness of media use."*Roulette Magnet*" in learning. Effectiveness of media use "*Roulette Magnet*" can be known from the results of the value *Pre-test* and *post-test*. The assessment of the pre-test results got a total score of 92, while the post-test score results got a total score of 144, looking at the results, it can be concluded that there is an increase in the results of the score *pre-test* to the value *post-test*. So that with these results, it can be known that, the use of media "*Roulette Magnet*"In learning, it can be said that it is effective in the learning process to get to know the concept of numbers 1-10.

Value data *pre-test* and *post – test* is then analyzed using the normality of gain (*N-Gain Score*). The results of the N-Gain calculation to find out the effectiveness were obtained on average of 0.597 in the medium category, which is in line with the opinion of (Masitoh, 2018; Yuliani, 2019), who stated that effective learning media can be seen from increasing the mastery of concepts (learning outcomes), after being given learning activities using learning media that have been developed and obtaining an N-gain value with the "moderate" category.

The above results show that, the learning medium "*Roulette Magnet*"can improve the quality of learning and support the goals of learning, so that the learning media "*Roulette Magnet"* In the teaching material, the introduction of the concept of numbers 1-10 in children aged 4-5 years is declared effective. This is in accordance with what was expressed by (Fathurraohman, 2017; Wiyani, 2019), who stated that learning media that qualifies as an effective learning medium, namely media that can support the achievement of learning goals. This is also in Hake's opinion, that the media is said to be effective if it has an interval of $0.3 <$ N-Gain ≥ 0.7.

In this development research process, three analyses have been carried out, and prove that, the media "*Roulette Magnet*", suitable for use in learning. Media"*Roulette Magnet*", has met the value of validity is very valid, the value of practicality is very practical, and the value of effectiveness is moderate. With the results of the above analysis, the media "*Roulette Magnet*", it is suitable to be used based on what is emphasized by (Khadijah, 2016; Suyadi, 2018), that the quality of learning media is determined by three criteria, namely validity, practicality, and effectiveness, this statement is also in accordance with the opinion of (Beaty, 2022), three criteria, namely, valid, practical, and effective are met, then a learning media is considered good or feasible.

CONCLUSION

Penelitian ini menyimpulkan bahwa manajemen pelaksanaan Kurikulum Merdeka di Based on the results of this research and development, it can be concluded that the *Roulette Magnet* learning media developed using the Discovery Learning model is effective, practical, and appropriate for introducing number symbols 1–10 to children aged 4–5 years. The media successfully engages students in active learning, supports their cognitive development, and enhances their ability to recognize, match, and associate number symbols with quantities. Validation from media experts, material experts, and practitioners (teachers) shows that the product meets the required educational standards for early childhood learning. The use of interactive and game-based media proves to be a valuable strategy in making abstract mathematical concepts more concrete and enjoyable for young learners.

It is recommended that early childhood educators incorporate interactive media such as *Roulette Magnet* into classroom activities to improve children's numeracy skills in an engaging way. Future research may further develop this media for other age groups or mathematical topics to broaden its applicability. Additionally, teacher training on the use of Discovery Learning and creative media integration should be enhanced to maximize the benefits of child-centered learning approaches. Lastly, it is important to conduct wider trials to test the long-term effectiveness of this media in various early childhood education contexts.

SUGGESTIONS/RECOMMENDATIONS

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